Florida Sea Grant

DRAFT

MARINE EDUCATION AND RESEARCH ORGANIZATIONS
IN FLORIDA

by

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Florida Institute of Technology
Melbourne, Florida 32901

Note: This document is a first draft. Updates or additions are requested from organizations whose inclusion in a revised version is appropriate. Blank survey sheet at the end of this publication may be completed and returned to: Editor, Florida Sea Grant College, GO22 McCarty Hall, University of Florida, Gainesville, FL 32611. Return by March 1, 1981, is requested.

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FOREWORD

Florida's marine and coastal resources attract international attention and account for major fractions of the state's immigration and tourist trade. Population growth has been fastest of all the major states, with 75 percent of new residents settling on the coast. Well over 30 million visitors annually come to the Sunshine State.

Residents, tourists, industry, and those charged with sustaining a productive marine resource base all have interests in obtaining or discovering information about these resources. This directory is prepared to assist those interests and to meet a need identified by a significant fraction of the state's marine research, development, and education community.

National and international programs depend on the ability to contact appropriate industrial, governmental, and academic scientists and educators. This directory is offered to further the organization and coordination of these groups.

It is also an attempt to update earlier efforts to summarize the activities of organizations in marine research and education in Florida. Oceanography in Florida -- 1970 was prepared by the Florida Council of 100 as a well-written and illustrated guide to business, education, research and government marine programs. It has been out-of-print for some time. University Curricula in the Marine Sciences and Related Fields is a national review prepared by the U.S. Department of Commerce, the most recent edition covering the 1979-1981 biennium. Aspects of both documents have been incorporated in this directory, yet it has been prepared selectively to use a consistent and abbreviated format.

Further, this edition, and the revised version, will be limited to coverage of educational and research organizations, and those groups with a statewide function involving information transfer. Manufacturers or businesses not totally marine and for which a marine location or market is not essential, are not listed, as adequate coverage is available in the telephone "Yellow Pages."

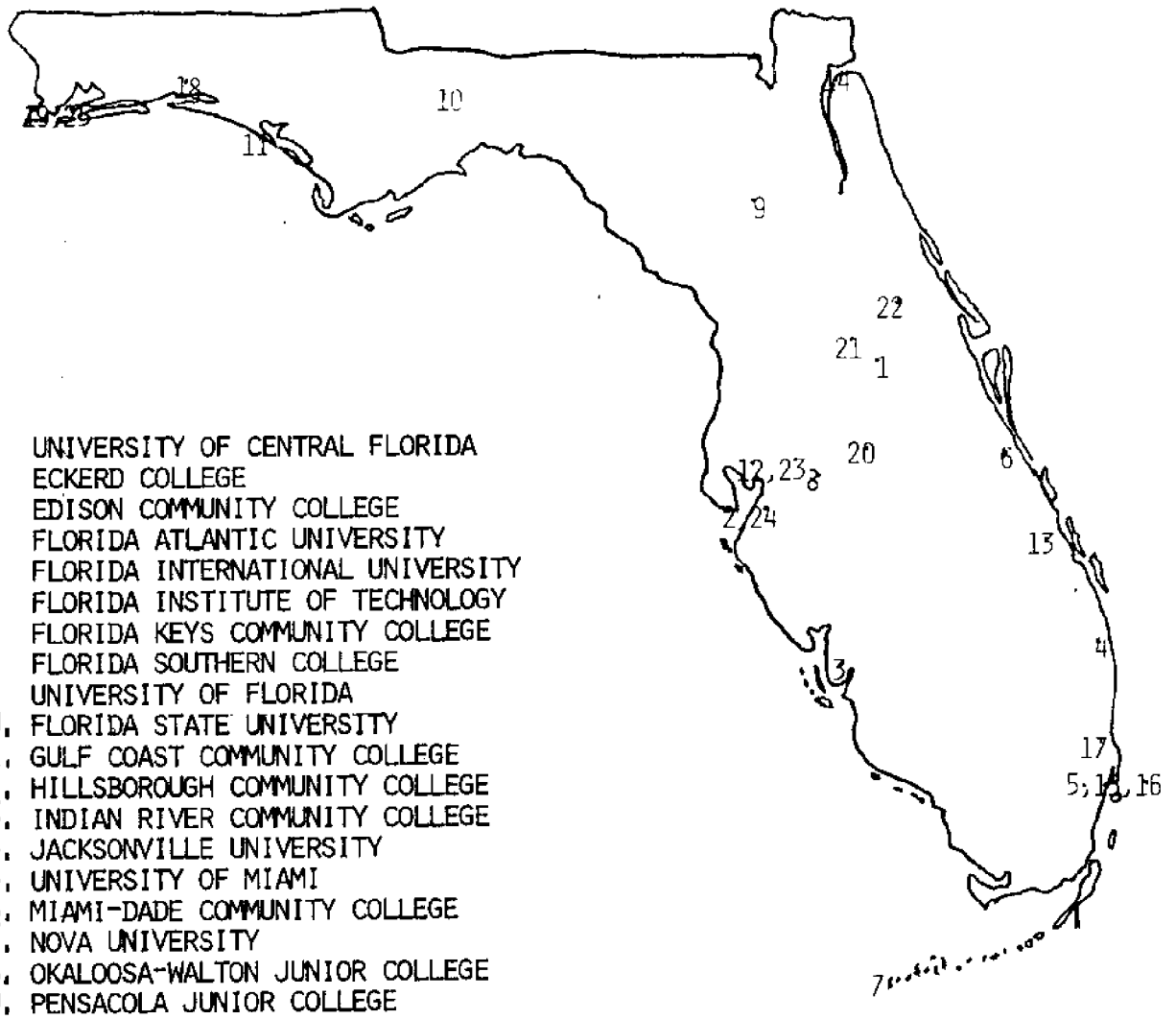
The word "marine" includes not only typical oceanographic pursuits, but also inshore scientific work plus economic, legal, and other social disciplines.

Florida Sea Grant College
William Seaman
Assistant Director

UNIVERSITIES AND COLLEGES

Higher education in public and private institutions includes two-year, four-year, and graduate programs. Whereas some schools have a small number of courses and faculty, others boast scores of faculty and courses plus major library, research, and data processing facilities. Aspects of extension/advisory services plus public service are stressed by some institutions.

UNIVERSITIES AND COLLEGES



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University of Central Florida
Department of Biological Sciences
P. O. Box 25000
Orlando, Florida 32816
(305)275-2141

18 faculty and/or research personnel
5 technical personnel

Disciplines represented are fisheries and biology.

Vessels: (3) 14' outboard skiff; (2) 17' outboard skiff; (1) 24' pontoon platform boat; (1) 28' diesel powered stern trawler

Scope of Activity: Local and State

The Department of Biological Sciences offers programs leading to the B. S. and M. S. degrees in biological sciences. The department includes 18 faculty members, 400 undergraduate majors, and 30 graduate students, and encompasses all traditional areas in biology. No specific academic programs in oceanography or marine biology are offered, but many courses include marine topics. In addition, faculty and graduate students conduct research in marine biology on the east-central coast of Florida, with special emphasis on marine fishes of the Indian River system and the biology of sea turtles.

The department occupies a modern building on the main campus of UCF, located ten miles east of Orlando. The building is supplied with a normal array of specialized equipment and includes laboratories devoted to water chemistry analysis and aquarium studies. The department maintains substantial museum collections of marine organisms and plants from the Cape Canaveral area. A field station on Merritt Island is accessible through cooperative agreements with NASA's Kennedy Space Center.

Eckerd College
34th Street & 54th Avenue,S.; P.O. Box 12560, St. Petersburg, FL 33733
813-867-1166

7 Full time faculty and/or research personnel
3 Full time t[illegible]al personnel

Disciplines represented are economics, biomedical, data systems, geology, physics, chemistry, social sciences, oceanography, and biology.

Vessels: N/A

Scope of activity is local

Marine related studies are focused primarily on Marine Biology. Eckerd College is located on Boca Ciega Bay which is contiguous with the Gulf of Mexico. Research and instructional studies deal primarily with Marine Invertebrate Physiology and Ecology, Marine Ecology, and behavior of selected Marine invertebrates. In addition, some of our Behavioral Science faculty have specific expertise in Environmental and Resource Management.

The college buildings are all about 15 years old and well equipped with such instruments as radioactive counting equipment, gas chromatographs, spectrophotometers, computer terminals, marine environment sampling equipment, preparatory instruments for electron microscopy. Periodically, marine vessels are rented for group field studies, especially during our winter term, which is designed for intensive single project oriented research.

Edison Community College
College Parkway, Ft. Myers, Florida 33907
813-481-2121 Ext. 258

One full time faculty
no full time technical personnel

Discipline represented is biology.

Vessels - None

Scope of activity is local.

The area related to this college (estuary, barrier island, gulf, marine marshes and mangrove communities) lends itself nicely to an ecological approach to Marine Biology for the Freshman and Sophomore college student with no science background. Our laboratory is equipped with professional collecting and sampling equipment. We have a local marine collection. We have a large and small aquaria for student use, and a well stocked library on marine science. Students do independent research topics in the course. Local professionals add enrichment to the course and local shrimp boats are used for deep water study.

Pine Jog Environmental Sciences Center of Florida Atlantic University
6301 Summit Boulevard, West Palm Beach, Florida 33406
305-686-6600

6 Full time faculty and/or reaearch personnel

Disciplines represented are geology, chemistry, diving, and biology.

Vessels: N/A

Scope of activity is local.

Pine Job is an environmental education center for students age 6 to 96. Its principal function is teaching field oriented ecology to children in grades 1 through 12. Marine ecology is the focus for high school students through a series of 5 one-week units centered around field investigations. College students, agency staff, and the general public utilize Pine Jog as a resource and support facility for their own research and information.

Facilities include 150 acres of pine-palmetto flatwoods, sawgrass marsh and pond, 4 classroom and office buildings, library, and equipment for physical, chemical and biological monitoring of aquatic systems including pH meter, mini-spectrophotometer, salinity meter, current meter, Niskin water bottle, Peterson dredge, secchi disk, sieves, Nephelometer, seines, plankton nets, microscopes. The Center can also draw on the resources of the main campus of Florida Atlantic University.

Florida International University
Dept. of Biological Sciences & Physical Sciences
Tamiami Trail
Miami, Florida 33199
(305) 522-2201

7 faculty and/or research personnel
N/A technical personnel

Disciplines represented are biomedical, geology, physics, chemistry, hydrodynamics, oceanography and biology.

Vessels: We use R/V bellows, several smaller vessels are used on an Ad hoc basis.

Scope of Activity: Local and State

Our only program is a certificate (undergraduate) program. Courses are offered at the graduate level and we do have a cooperative masters degree with FIU but it is not necessarily a marine science degree.

Florida Institute of Technology
Melbourne, Fl. 32901 (Main campus)
(305) 723-3701
Jensen Beach, Fl. 33457 (second campus)
(305) 334-4200

45 faculty and/or research personnel.
20 technical personnel.

Disciplines represented on the staff are fisheries, aquaculture, biomedical, engineering, acoustics, data systems, coastal planning, geology, erosion, physics, chemistry, legal, diving, hydrodynamics, oceanography, and biology.

Vessels: three 65' (R/V Tursiops, R/V Sea Hunter, and Aquarius), one 58' (LCM-6), one 45' (Joie de Vivre), one 42' (R/V Jenny D.) and 6 smaller vessels from 13' to 25'.

Marine related studies are carried primarily at the F.I.T. Melbourne campus by the department of Oceanography (chemical, biological, geological, and physical oceanography) and Ocean Engineering (structure and coastal engineering, corrosion and materials, and ocean mining). The department of Biology also has a special marine biology program which stresses research on tropical fish, marine invertebrate zoology, and marine ecology. Additional research is done by the departments of Chemistry, Environmental Engineering, and Physics. Programs leading to B.S., M.S., and Ph.D. degrees are offered which prepare the student for the diverse opportunities in government, industry, and the academic community. Located at the Jensen Beach campus of F.I.T. is the School of Applied Technology which offers training in aquaculture, marine electronics and photography, and off-shore and underwater technology. The Jensen Beach campus has options leading to an A.S. and/or a B.S. in technician/technology oriented studies. The Florida Institute of Technology is an accredited, co-educational, independant, and privately controlled and supported institution.

The university is a modern, well-equipped facility with electron microscopes, environmental analysis lab, hydro-acoustics lab, fluid dynamics lab, anechoic chamber, geology and soils lab, water analysis lab, experimental stress analysis lab, computer center including a PDP 11/34 unit with time sharing, an IBM 370/125 and an 8800 microcomputer. Additional tropical facilities are located at F.I.T. field station on the eastern end of Grand Bahama on Deep Water Cay, at the Harbor Branch Foundation's Link Port Facility, and at the F.I.T. anchorage located in Melbourne on Crane Creek. Much of F.I.T.'s marine research activity involves estuarine studies on the Indian River (a long brachish-water lagoon near the campus, as well as studies in the Florida Keys. The Biology department museum contains a valuable collection of Florida fauna, especially marine invertebrates and fish. Extensive aquaculture facilities are located at the Jensen Beach campus.

Florida Keys Community College
Key West, Florida 33040
305-296-9081

10 full time faculty and/or research personnel
1 technical personnel

Navigation, geology, erosion, physics, chemistry, social sciences, diving, oceanography, biology, environmental technology, marine electronics and propulsion systems technology.

Many local vessels are available for charter, or through arrangements with Navy and other marine oriented non-profit organizations.

Scope of activity is national

Marine related studies are concentrated in Vocation-Technical programs leading to an Associate in Science degree. These programs include Marine Electronics Technology, Marine Propulsion Technology, and Environmental Marine Technology. Certificate programs are also offered in Gasoline Engine Technology and Marine Diesel Technology. Associate in Arts Degree program are also offered in Biology, Chemistry, Physics and Mathematics in preparation for transfer to an upper division university to complete a B.S. or B. A.degree

Because of the location of the College Campus in the Florida Keys, it is possible to make year round use of both the traditional indoor laboratory and an outdoor field experience natural laboratory. Field experience as an educational tool is facilitated by the location of the classroom buildings right on the shoreline of the Gulf of Mexico and the Atlantic Ocean. Sea trials, dockside repairs, scuba diving, underwater photography and the collection of marine organisms and seawater samples are part of normal laboratory courses. Laboratory equipment available for student use includes fully operational diesel engines, and a variety of gasoline and outboard engines, electronics systems and test equipment such as direction finders, radar, communications and electronic navigation systems, brightfield and phase contrast microscopes, visible and atomic absorption spectrometers, gas chromatographs, a variety of field sampling equipment, and scuba equipment along with underwater cameras. A small but growing museum of local marine invertebrates, fish, and plants and a large technical reference library are also available on campus for student use. The Environmental Marine Science Tank Room provides a large aquarium environment for student projects and observations of living organisms in the classroom.

Florida Southern College
Biology Department, Lakeland, Florida 38802
813-683-5521 (472)

5 full time faculty and/or research personnel
No technical personnel

Discipline is biology

No vessels

Scope of activity is local and state.

The Biology Department of Florida Southern College does not offer a marine biology major but does provide some experience through course work in the marine area. Courses in marine biology and invertebrate zoology provide exposure to marine organisms and their environment. Additional periodic course offerings are in the marine area.

The department provides a mixing tank and approximately 15 small salt water aquaria for student use. Experiments may be conducted using basic physiological research tools.

University of Florida
Gainesville, Florida 32611
(904) 392-1268

Over 100 faculty and/or research personnel in marine related work
Over 100 technical personnel

Fisheries, aquaculture, economics, biomedical, seafood technology, engineering, acoustics, data systems, coastal planning, geology, erosion, physics, chemistry, legal, social sciences, diving, hydrodynamics, oceanography and biology

Vessels: 2 vessels in 35' range, numerous boats and skiffs in 16'-24' range

Scope of Activity: Local, State, Regional, National and Global

The University of Florida has many collegiate, departmental and interdisciplinary programs in education and research in oceanography and marine related fields. These include departments in the (1) College of Engineering: Coastal and Oceanographic, Environmental, Civil, Engineering Sciences and Mechanics, Aerospace, Agricultural, Chemical, Electrical, Mechanical, Materials Science, Nuclear, and Industrial and Systems Engineering; (2) College of Liberal Arts and Sciences: Botany, Zoology, and Geology; (3) Institute of Food and Agricultural Sciences: Food Sciences, Food and Resource Ecomomics, Microbiology and Cell Science, Nematology, School of Forest Resources and Conservation, and Marine Advisory Service; (4) College of Medicine: Immunology and Medical Microbiology, Biochemistry, Pathology, Pharmacology, and Physiology; (5) College of Veterinary Medicine; and (6) College of Law.

The Florida Sea Grant College has its offices located on campus. This agency administers marine-related research grants conducted by investigators throughout the State University System.

Special marine-related facilities include: Coastal Engineering Laboratory, with wind and wave tank, model slabs, wave generators, automatic tide level generator, sand tracer laboratory, and extensive field and remote sensing equipment; the UF Marine Laboratory at Seahorse Key, with 33' boat and other facilities for gulf coastal waters field work; the Whitney Marine Research Laboratory at Marineland, equipped for biomedical research; the Florida State Museum, with research collections of fish and molluscs; the Communications Sciences Laboratory, equipped for underwater diver communication research; and the Center for Wetlands, involved in environmental research on coastal marshes and estuaries.

Florida State University
Tallahassee, Florida 32306
904/644-6700 (Dept. of Oceanography)

21 (OCN), 50 (other depts.) faculty and/or research personnel
5 (OCN) technical personnel

Disciplines represented are aquaculture, geology, chemistry, hydrodynamics, oceanography and biology.

Vessels: 65-ft R/V Bellows

Scope of Activity: Global

A graduate program in Oceanography has existed at Florida State University since 1949, first in an interdisciplinary institute, and later (since 1966) in a department within the College of Arts and Sciences. The Department of Oceanography, which offers both the M.S. and Ph.D. degrees in Oceanography with specialization in physical, biological, chemical, and geological oceanography, is the center for marine studies at Florida State University. Additional marine and environmental research is conducted by the departments of Biological Sciences (15 faculty in marine-related fields), Chemistry (6), Geology (10), Mathematics (5), Meteorology (7), Physics (2), and Statistics (3), as well as the Geophysical Fluid Dynamics Institute and Institute of Molecular Biophysics. The Department of Oceanography is composed of 14 faculty members, 7 research associates, 5 technical staff, 9 administrative staff, 14 Ph.D. students, and 30 M.S. students.

The Department of Oceanography contains laboratories, offices, reading rooms, and all the facilities and amenities necessary for graduate education and quality scientific research. Some of the laboratories currently in operation include: water quality analysis, organic geochemistry, trace element analysis, radiochemistry, microbial ecology, mariculture, phytoplankton ecology, numerical modeling, fluid dynamics, and more. The Department also has a well equipped machine shop, as well as a current-meter facility. Other facilities to which the Department of Oceanography has access include laboratories at the Geophysical Fluid Dynamics Institute, where there is active research in geophysical problems and some of our faculty and students do their oceanography circulation modelling experiments; the National Science Foundation Antarctic Marine Geology Research Facility and Core Library in the Department of Geology which provides special facilities for sedimentation and micropaleontology research; the Electron Microscopy Laboratory maintained by the Department of Biological Sciences; the Control Data Corporation Cyber 73 and 74 computers at the University Computing Center; as well as the Florida State University Marine Laboratory at Turkey Point, about 45 miles southwest of Tallahassee. This marine facility includes laboratories for microbiological, physiological, ecological, geochemical and maricultural oceanographic research.

Gulf Coast Community College
5230 W. Hwy. 98
Panama City, Florida 32401
904-769-1551

98 faculty and/or research personnel
N/A technical personnel

Disciplines (Pre-programs) represented are seafood technology, engineering, physics, chemistry, social sciences, oceanography and biology.

Vessels: 1 - 20 ft. - fiberglass open workboat

Scope of Activity: Local

Marine related studies are carried out at Gulf Coast Community College by divisions of Math-Science and Technology. The A.S. degree in Marine Technology, as well as, the A.A. degree in Pre-Oceanography are offered.

Special facilities are housed in the Division of Mathematics and Science. One laboratory is used exclusively for marine biology. A self-contained saltwater aquarium is used in the laboratory; also, the college's boat is used for field study. A 12-acre site with waterfront on a saltwater bay with deep and shallow areas as well as an island is owned by the college. The college also borders a large bay.

The Hillsborough Community College Environment
Studies Center at Cockroach Bay
P.O. Box 22127, Tampa, Florida 33622
813-879-7222 ext 530

2 full time faculty and/or research personnel
No technical personnel

Discipline is biology

Vessels: 1, 22 foot modified gill net boat
1, 24 foot pontoon boat

Scope of activity is local

The Environmental Studies Center is under the auspices of Hillsborough Community College and is open to junior high through adult classes, individuals, and private and civic organizations. Field activities are emphasized and geared to the specific interests and/or age level of the group. One-day field trips include water testing; studying and sampling various communities (e.g., sea grass and algae flats, benthos, plankton); investigating food chains and surveying the local marine plants and animals; and discussions of marine ecology. Terrestrial trips include identifying plant communities (e.g., Sabal palm thicket, hammock, salt marsh, mangrove) and dominant species making up those communities; measuring physical parameters; soil testing; identifying poisonous, edible, and exotic species; and discussions of terrestrial ecology. Other programs sponsored by the Environmental Studies Center include teacher workshops, slide presentations to civic and community groups, and the Annual Conference Wetlands Restoration and Creation.

The 20 acres of land adjacent to a mangrove estuary system provides an ideal atmosphere for field-oriented environmental education. Several marine and shoreline terrestrial communities are available for various activities. Physical facilities include laboratory-classroom buildings, boardwalks, boats, and miles of nature trails. Appropriate lab and field equipment is available to facilitate the learning process. A reference library of both specimens and printed materials is ever increasing.

Indian River Community College
3209 Virginia Avenue, Ft. Pierce, Florida 33450
305-464-2000

Full time personnel, faculty and/or research personnel N/A
Full time personnel, technical personnel N/A

Disciplines represented are fisheries, geology, diving, oceanography and biology.

Vessels: None at present

Scope of activity is state.

Indian River Community College has a diverse biological curriculum including various programs in the marine sciences. An Associate in Arts Program in marine science is designed to prepare a student for transfer to a senior university. There is also a Marine Science Technology Program leading to an Associate in Science Degree. Course offerings in the marine sciences presently include Oceanography and Marine Biology. Current and future plans call for expansion of IRCC's curriculum to include programs in Marine Science, Marine Science Technology, Oceanographic and Waste Water Management.

IRCC recently acquired the Seaway Drive site at Fort Pierce Inlet. Ideally situated for marine studies, this facility is being transformed into a marine science teaching and research center. Numerous publications on various aspects of marine science have been authored by the IRCC faculty. Their expertise is frequently requested by various civic, governmental, academic and research groups.

Jacksonville University
Dept. of Biology
Jacksonville, Florida 32211
(904) 744-3950

100+ faculty and/or research personnel

Disciplines represented are fisheries, aquaculture, economics, biomedical, engineering, acoustics, navigation, data systems, coastal planning, geology, physics, chemistry, social sciences, diving, oceanography and biology.

Vessels: 1 - 18 ft. Landau

Scope of Activity: Local, State, Regional, National and Global

Marine Science is a multi disciplined program within the Department of Biology with courses in biology, chemistry, physics, oceanography, math and related areas. Research interest includes bioassay, toxicology, aquaculture, species diversity, and taxonomy. Additional research is conducted through The Environmental Center which operates as a research and consulting arm of the University. Research projects and consulting contracts funded through private and governmental agencies are currently underway. J.U. is fully-accredited, co-educational, private, independent and non-sectarian.

The University is a modern facility located on 273 acres on the St. John's River with 26 buildings including 8 residence halls. The library houses 225,000 volumes. In addition to laboratories and classrooms, the University houses an extensive Vertebrate and Invertebrate Collection, The Maggie Wheldon Shell Collection, a fossil collection, and herbarium concentrating on the flora of the southeast. The Theodore Roosevelt Preserve which comprises some 600 acres of natural oak-hickory woodland, swamp and brackish marsh-land is owned by Nature Conservancy and leased to J.U. for primary use as a biological study area. The Computer Center includes an HP 3000 with a variety of input and output modes including dial-up ports.

University of Miami
Rosenstiel School of Marine and Atmospheric Science
4600 Rickenbacker Causeway
Miami, Florida 33149
(305) 350-7211

73 faculty and 20 research associates
50 technical personnel

Disciplines represented are fisheries, aquaculture, engineering, acoustics, coastal planning, geology, erosion, physics, chemistry, hydrodynamics, oceanography and biology.

Vessels: R/V Columbus Iselin 170'; R/V Calanus 62'; R/V Orca 45'

Scope of Activity: Local, State and Global

The Master of Science and the Doctor of Philosophy degrees in marine science are offered with majors in marine biological science (including fishery science), marine geology and geophysics, atmospheric science, physical oceanography, and marine and atmospheric chemistry. A program in ocean engineering is offered jointly with the School of Engineering and Architecture. An interdisciplinary Master of Arts degree in marine science is offered for teachers, lawyers, and other professionals wishing to acquire broad advanced training in connection with their employment goals.

The School's laboratories are equipped for geochemical research; physical, chemical, and geological research; and various kinds of nuclear and biological studies. Many presision instruments, including mass spectrometers, X-ray spectrographs, gas chromatographs, and a scanning electron microscope are available for both faculty and student use. The Glassell Building houses a controlled-environment system which is equipped to regulate those parameters that are most significant in studies of marine ecology and behavior. A museum, vertebrate and invertebrate reference collections, computer facility, and a large library are also available.

Miami-Dade Community College
1090 N. N.W. River Drive
Miami, Florida
(305) 324-4303

3 faculty members
1 technical aid

Disciplines represented are navigation, diving, and oceanography.

Vessels: one 42' fiberglass hull diesel workboat, two 20' Seacraft twin Johnston "70's"

The department of Marine Science Technology of M.-D.C.C. offers programs in the fields of marine survey, marine instrumentation, marine electronics, and marine engineering. The marine science technician provides a modern link between the research scientist and the skilled craftsmen in the ocean sciences and between the engineer and the tradesman in the ocean industry.

In addition to the schedualed classes, students study informally through internship with national research institutions such as N.O.A.A., Hydrolab, National Fisheries and with other schools of marine science. Many students find part-time employment with local marine industries.

Nova University Ocean Sciences Center
8000 North Ocean Drive
Dania, Florida 33004
(305) 47508300

6 faculty and/or research personnel
6 technical personnel

Disciplines represented are fisheries, data systems, geology, physics, oceanography and biology.

Vessels: 1 - 73' cruiser

Scope of Activity: Global

The Ocean Sciences Center is concerned with studies and investigation in experimental and theoretical oceanography. Studies include modelling of large-scale ocean circulation, coastal dynamics, ocean-atmosphere coupling, coral growth and coral reef assessment, physiology of marine phytoplankton, identification of invertebrates, cell ultrastructure, fouling effects, chaetagnath morphology, lobster migration and larval recruitment. Primary regions of interest include Florida's coastal waters, the continental shelf and slope waters of the southeastern U.S., the waters of the Caribbean and Gulf of Mexico, and the equatorial Pacific Ocean. The Ocean Sciences Center offers the Ph.D. degree in Ocean Sciences.

The Ocean Sciences Center is located on a 10-acre site in Port Everglades, near the Port entrance. Located in a 20,000 sq. ft. warehouse building are a machine shop, carpentry shop, darkroom, electron microscope laboratory, computing center, offices, and the William Springer Richardson Library. Additional offices and seminar rooms are located on a two-story houseboat moored in the boat basin. Another building provides a sea turtle incubation area, a coral workshop, and other laboratory space. Several trailers are available for use as offices, a biological laboratory, and other wet labs. Additional facilities and equipment include a clean lab for electron microscopy preparation, chemostats, an X-ray machine, and a rock saw.

Dept. Biology
Okaloosa-Walton JR. College
Niceville, Florida 32578
678-5111

4 faculty and/or research personnel

Biology

Scope of Activity: Local

Okaloosa-Walton JR. College prepares a small number of students for transfer programs lending to B.S. degrees in Estuarine and Marine Biology. The department of Biology collects local marine invertebrates and fishes on a regular basis. The physical science department teaches Oceanography each term.

Pensacola Junior College
1000 College Blvd. Pensacola 32504
904 476-5410 ext. 263

14 faculty and/or research personnel

Oceanography, biology

Scope of activity is state-wide

In our general zoology course we have a marine biology orientation using principally marine specimens. Our invertebrate zoology course is taught essentially as marine biology using marine specimens almost exclusively.

We have very little research going on nor do we have research facilities. The mission of this college is to produce educational curriculae for college transfer students. This consists of either general biology for non majors or biology suitable for pre-professional education.

Polk Community College
999 Ave. H N.E.
Winterhaven, Florida 33880
813-294-7771

19 faculty and/or research personnel
3 technical personnel

Economics, engineering, data systems, physics, chemistry, and biology

Scope of Activity: Local

Polk Community College is not heavily Marine Oriented. Portions of such courses as physical sciences, and Biology are devoted to Marine Studies. Occasionally non-credit courses in Marine Biology are offered. Research activities are not conducted. Programs lead to the A.A. and A.S. degrees. The College has well equipped Chemistry, Physics and Biology laboratories, very adequate for the freshman and sophomore student. The computer center includes a B 1860 processor with 262,000 bytes of main memory, 260 million bytes of data storage capacity on two disk packs, a line printer, a card reader, two-phase-encoded tape drives, a multi-line control, eighteen TD 800 input and display terminals, a remote printer, an on-line optical mark page reader terminal, and a remote job entry station consisting of a B 761 processor, line printer, card reader, and console printer.

A number of Burroughs program products are used. They include COBOL, RPG, FORTRAN, and BASIC language compilers; Network Definition Language (NDL), HOST/RJE, TEXT/EDITOR, and the FORTE/2 file organization software. All of these software products, as well as the MCP operating system, have proven to be reliable products that perform as specified. Plans include implementation of the REPORTER data inquiry system and change from the FORTE/2 file technique to the newer DATA Base Management System (DMS II), and its related outline inquiry system (DMINQUIRY).

The Data Processing staff at Polk Community College consists of eight people, five of whom are involved in daily production and management, leaving the programming staff of one analyst and two programmers to develop and maintain data systems.

Rollins College
Winter Park, Florida 32789
305-646-2000

11 Full time science faculty and/or research personnel
1 Full time,technical person

Disciplines represented, fisheries, physics, chemistry, biology.

Vessels: 3-14 ft. Trihulls, 1-16 ft. Electrofishing boat, 1-12 ft. Jon Boat, 1-14 ft. Utility boat.

Scope of activity is local.

Rollins is a private, independent 4-year college located at Winter Park, Florida. Its primary goal is the instruction of undergraduate students. Currently the Biology Department is engaged in a large limnological research project in Central Florida. Instruction in marine biology is carried on in various courses, both in Florida and at the Marine station of McGill University in Barbados, W.I. The college offers the A.B. degree.

Rollins College has a modern, well-equipped science facility with equipment and expertise for both Chemical and Biological water analysis. The facility also prosesses a PDP 11/40 computer with time sharing. The Biology Department has five small boats, a 16 ft. electrofishing research vessel, block nets for fisheries research work, and good collections of Florida and Caribbean flora and fauna. In addition, the college possesses the Beal-Maltbie Shell Museum, one of the world's better collections.

Seminole Community College
Sanford, Florida 32771
(305) 323-1450

1 faculty member

Disciplines represented are geology and oceanography.

Scope of activity is local.

No vessels.

We belong to the state education system of community colleges and thus aid in making the public more aware of the field of oceanography. We offer oceanography as part of our Earth Science course and offer an introductory 3 semester hours in oceanography.

Since our interest lies in teaching oceanography, the small amount of equipment that we do have is oriented toward educational goals.

University of South Florida
Department of Biology
4202 Fowler Avenue, Tampa, Florida 33620
813-974-2668

35 full time faculty and/or research personnel
8 full time technical personnel

Discipline represented is biology

A variety of small boats (to 21 feet) for shallow water work.

Scope of activity is local

B. A. Degrees are offered in Biology, Zoology, Microbiology and Botany. All undergraduate majors may be considered preparatory for a career in marine biology. Seniors in the Biology program may concentrate in Marine Biology by selection of a wide variety of marine oriented upper level courses. Both the M. A. and Ph.D. degrees are available with specialty in Marine Biology. Of the 35 faculty in the department, 12 have a marine-orientation.

The Department of Biology is housed in three buildings on the Tampa Campus and is well equipped for marine oriented research. In addition to circulation seawater systems for maintenance of marine organisms, the Department has an electron microscopy laboratory (both SEM and TEM facilities), controlled culture systems, field vehicles and boats, amino acid analyser, gas chromatographs, liquid scintillation counters, closed circuit color television, ets. In addition to the University of South Florida IBM computer, the Department maintains a minicomputer interfaced with much of the electronic laboratory equipment.

Other campuses of the University of South Florida as follows:

Florida Institute for Oceanography
830 First Street South, St. Petersburg, Florida 33701
813-893-9100

4 Full time Personnel - Director; Assistant Director; Administrative Assistant; Secretary
4 Full time Technicians - Marine Superintendent, Captain, Mechanic and Cook

Disciplines represented are biology, aquaculture, food sciences/food technology, meteorology, geology, oceanography, ecological sciences, pollution, chemistry, physic, engineering, policy and planning, management, and education.

Vessels: R/V Bellows, 65' steel hull, diesel powered; complete navigation equipment (LORAN C; RADAR; depth recorders; automatic pilot).

Scope of activity is local, state, regional and national.

The Florida Institute for Oceanography (FIO), a Type I institute at the University of South Florida, was established by action of the Florida Board of Regents in April, 1978. The purpose of the Institute is to promote oceanography education, research and development, with special attention to oceanographic aspects of importance to Florida and its State University System which can be most appropriately managed by a central organization. The goals of the FIO include the provision of special facilities, support of interdisciplinary and interinstitutional programs, and promotion of the national and international relationships of the oceanographic community in the State. The Institute operates the oceanographic research vessel BELLOWS, and with the host university (USF) in support, is competent to negotiate and administer oceanographic contracts.

The membership of the Advisory Council of the Florida Institute for Oceanography consists of representatives of the presidents of the nine universities of the State University System, a representative of the University of Miami, and a representative of the Florida Department of Natural Resources. Other agencies and institutions of Florida may become eligible for membership.

Division of Natural Sciences, New College - U.S.F.
New College Environmental Studies Program, New College - U.S.F.
5700 N. Trail, Sarosota, Florida 33580
813-355-7671 Ext 232

2 full time faculty and/or research personnel
No full time technical personnel

Disciplines represented are coastal planning, erosion, and biology.

Vessels: four canoes

Scope of activity is local.

Inshore, estuarine, barrier island and coastal zone related studies are conducted in the coastal region of southwest Florida from Manatee County south to Lee County. The campus, located on Sarasota Bay, serves as a home base for field oriented studies as well as providing research facilities for laboratory experimentation. Programs leading to the B.A. degree are offered.

Hardware facilities consist of specialized light microscopes and standard biochemical and water chemistry equipments. The major software facility is a reprint and grey literature collection of papers on various local coastal systems. Field facilities include several natural and disturbed sites - mangrove preserves, barrier islands, coastal pine flatwoods, tidal creeks - available for long term descriptive and experimental field studies.

University of Tampa
Kennedy Blvd.
Tampa, Florida 33606
813-253-8861

16 faculty and/or research personnel

Navigation, physics, chemistry, diving, oceanography, and biology

Vessels: One 45' Lustom

Scope of Activity: Local, State

The University of Tampa is a fully-accredited, independent, secular, co-educational institution. The most popular undergraduate major in the Division of Science and Mathematics is Marine Science which is taught by professors of various scientific disciplines. Student/faculty research is conducted in the Hillsborough River, Tampa Bay, and the Gulf of Mexico. Current projects include rotifer genetics; fish parasitology; taxonomy, distribution and abundance of various marine organisms; and water chemistry analysis.

The Division is proud of its custom-built, teaching/research vessel which can accommodate as many as 20 students with dive gear and sampling equipment. In addition to the usual laboratory equipment, the students may utilize atomic absorption; gas chromatography; and UV, IR, and NMR Spectrophotometry. The Computer Center houses two NCR Computers.

The University of West Florida
Departments of Biology and Chemistry
Pensacola, Florida 32504
904-476-9500

19 faculty and/or research personnel
17 technical personnel

Fisheries, aquaculture, biomedical, seafood technology, coastal planning, geology, physics, chemistry, diving, oceanography, and biology

Vessels: 12' Boston Whaler, 4 14' Boston Whalers, 24' In-Board out drive

Scope of Activity: Local, State, Regional, National, and Global

The University of West Florida is located on a 1,000 acre wildlife preserve approximately ten miles north of Pensacola. In addition to well-equipped marine research and teaching facilities housed by the biology and chemistry departments on the main campus, the University operates a modern marine research laboratory in cooperation with the Environmental Protection Agency in Gulf Breeze, Florida, about 20 miles southeast of the campus.

The Biology Department offers programs leading to B.S. and M.S. degrees with marine science emphases. Marine studies ranging from estuarine management to mariculture, invertebrate physiology, phycology, and blue water biological oceanography are supported by extensive equipment holdings including electron microscope, NMR, physiology and radiochemistry laboratories. Two large wetroom laboratories contain aquaria with a holding capacity of some 3,200 gallons of seawater. The Gulf Breeze laboratory facility has outside holding and experimental ponds, and flow-through seawater systems. On-campus and time sharing access provides time for both graduate and faculty research. The University has immediate access to the large estuarine systems surrounding the campus and to the Gulf of Mexico from the Gulf Breeze Laboratory. Coastal research is conducted from a 24-foot and four 14-foot boats. Open ocean ship time is primarily supported by the Florida Institute for Oceanography with which the University has close ties. An herbarium and invertebrate and vertebrate museums are located in the biology department on the main campus.

SEA GRANT

FLORIDA SEA GRANT COLLEGE

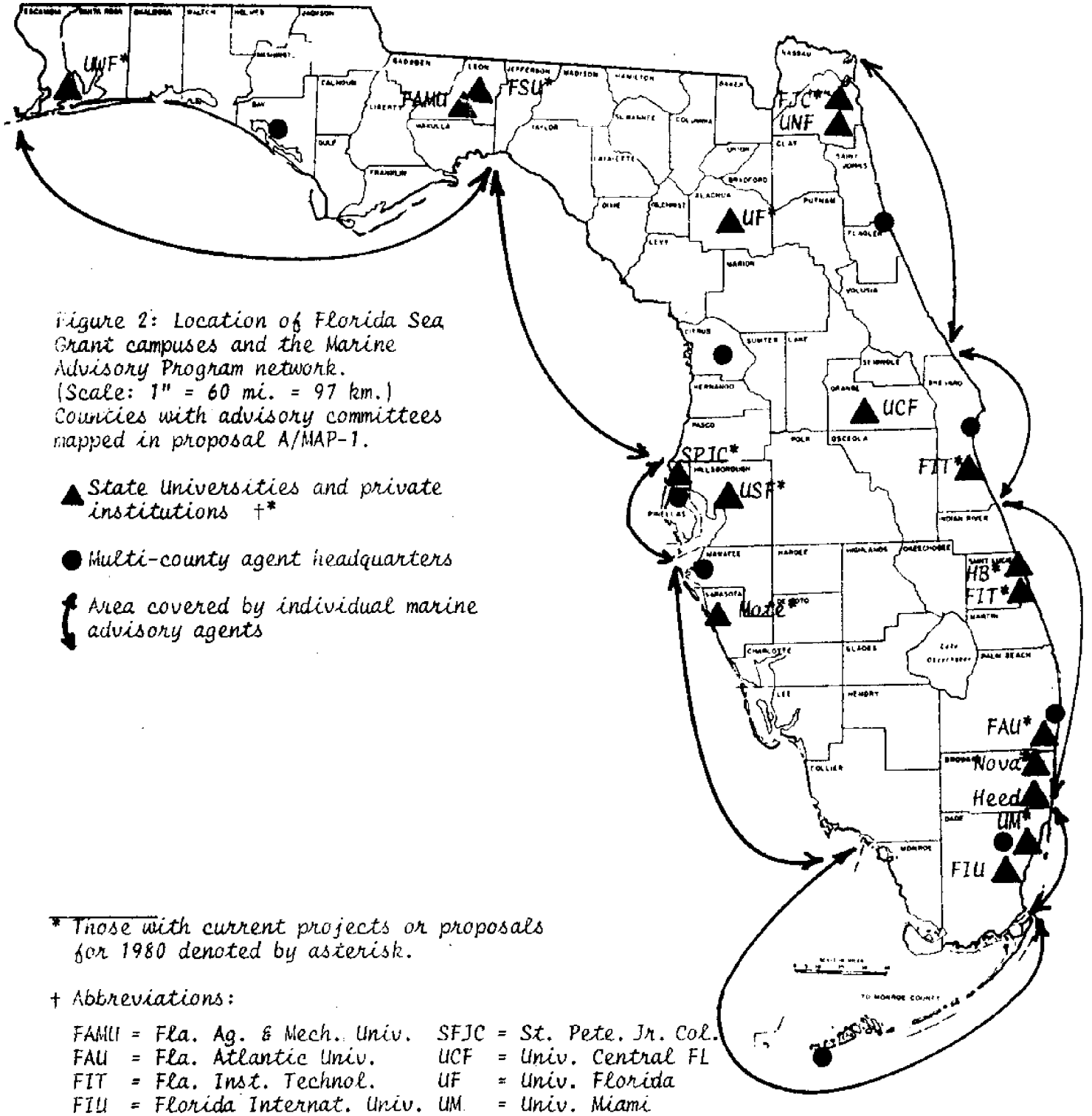


Figure 2: Location of Florida Sea Grant campuses and the Marine Advisory Program network. (Scale: 1" = 60 mi. = 97 km.) Counties with advisory committees mapped in proposal A/MAP-1.

▲ State Universities and private institutions †*

● Multi-county agent headquarters

{ Area covered by individual marine advisory agents

* Those with current projects or proposals for 1980 denoted by asterisk.

† Abbreviations:

FAMU	= Fla. Ag. & Mech. Univ.	SFJC	= St. Pete. Jr. Col.
FAU	= Fla. Atlantic Univ.	UCF	= Univ. Central FL
FIT	= Fla. Inst. Technol.	UF	= Univ. Florida
FIU	= Florida Internat. Univ.	UM	= Univ. Miami
FJC	= Florida Junior College	UNF	= Univ. North FL
FSU	= Florida State Univ.	USF	= Univ. South FL
HB	= Harbor Branch Found.	UWF	= Univ. West FL

Florida Sea Grant College
3028 McCarty Hall
University of Florida
Gainesville, FL 32611
(904) 392-1965

6 Administrative personnel (full and part-time)
15 Field and technical advisory personnel (full-time)
32 Research and education faculty (part-time grant support)
99 Professional and research associate personnel (part-time)
30 Graduate students

Disciplines represented include architecture, botany, chemistry, ecology, economics, engineering (civil, environmental, nautical, oceanographic), law, oceanography, ornamental horticulture, planning, seafood technology, social sciences, zoology.

Vessels: None owned

Scope of activity: Primarily statewide, with local outreach through marine advisory agent individual programs. Other projects are generic and bear on regional and national needs. There is also a small international component.

Florida Sea Grant College is a university-based program that conducts applied marine activities in research, technology transfer, advisory services, and education. It is administered from the offices of the Director at the University of Florida and includes all nine state universities in the State University System as well as cooperating community colleges and private educational institutions such as the University of Miami and Florida Institute of Technology. Coordinators at participating universities work with the office of the director to identify areas of pertinent research. Also, faculty members become involved on the basis of competitive grant proposals that reflect user group need and partnership in problem-solving.

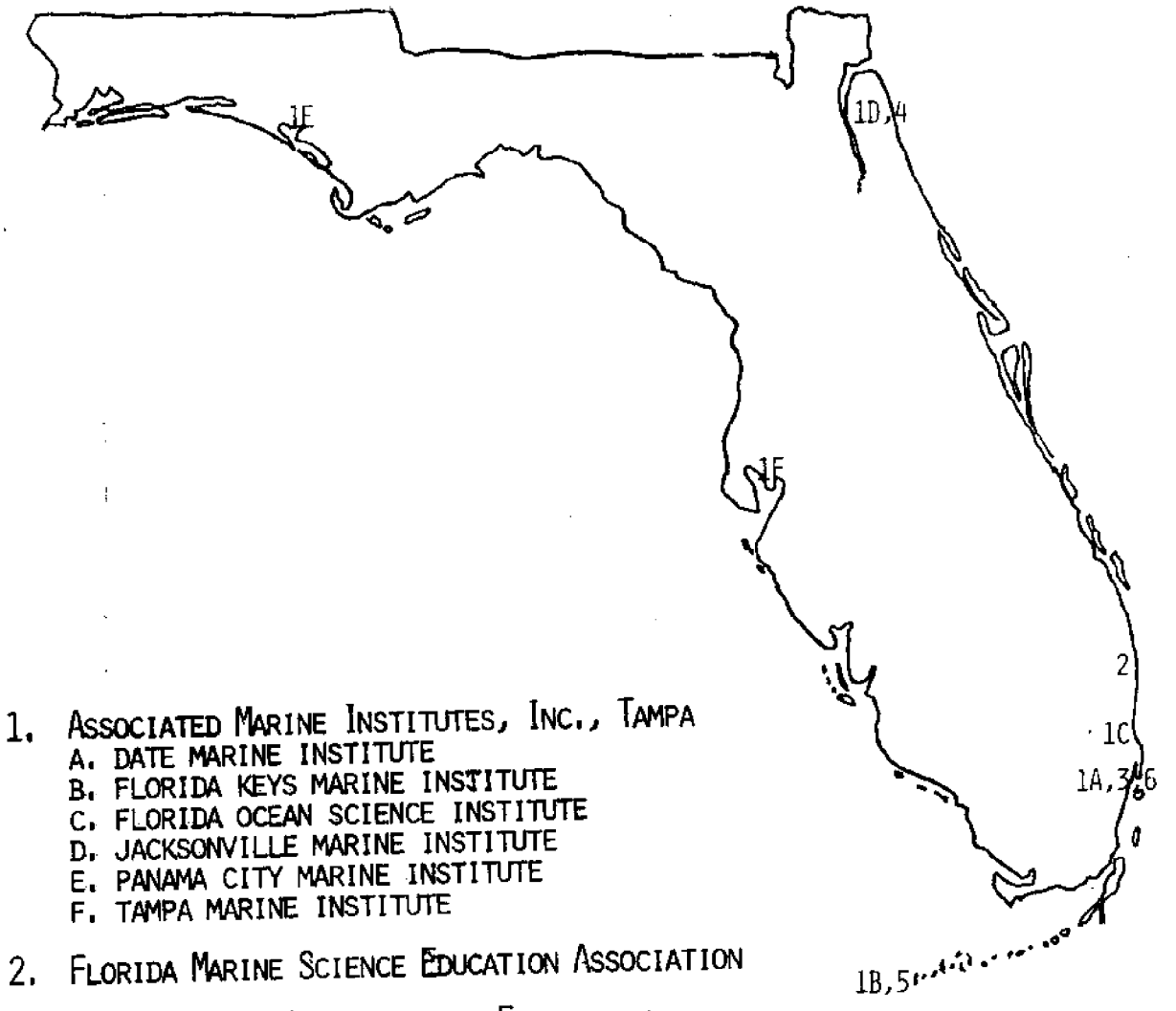
Major efforts center on three broad categories of research--coastal processes, coastal development, and living marine resources. Audiences and needs addressed include marine industries such as marinas, sport and commercial fishing, engineering, coastal planning and seafood technology.

Publications include technical reports, advisory bulletins and fact sheets, plus a bimonthly newsletter. Locally, the first point of contact is usually the marine advisory agent.

NON-COLLEGIATE EDUCATION

There are efforts promoted by secondary education as well as by public interest groups. However, the directory does not list school-by-school courses or curricula which can be obtained locally by the interested person.

NON-COLLEGIATE EDUCATION



1. ASSOCIATED MARINE INSTITUTES, INC., TAMPA
   - A. DATE MARINE INSTITUTE
   - B. FLORIDA KEYS MARINE INSTITUTE
   - C. FLORIDA OCEAN SCIENCE INSTITUTE
   - D. JACKSONVILLE MARINE INSTITUTE
   - E. PANAMA CITY MARINE INSTITUTE
   - F. TAMPA MARINE INSTITUTE
2. FLORIDA MARINE SCIENCE EDUCATION ASSOCIATION
3. INTERNATIONAL OCEANOGRAPHIC FOUNDATION
4. MARINE SCIENCE EDUCATION CENTER
5. MARITIME AGRICULTURAL TRAINING EXPERIENCE
6. MUSEUM OF SCIENCE, INC.

Associated Marine Institute, Inc.
1311 N. Westshore Blvd., Ste. 202
Tampa, Florida 33607
(813) 879-7137

110 faculty and/or research personnel
72 technical personnel

Fisheries, aquaculture, navigation, coastal planning, erosion, diving, oceanography and biology

Vessels: 33' Diesel Workboat, 21 (17'-25') Outboard Runabouts, 4 14' & 2 15'6" Sailboats, 8 Canoes, 36' Pontoon Workboat, 101' barge, 63' Sailboat, 42' Motor Yacht, 45' Motor Yacht, 45' Motor Yacht, 61' Tugboat

Scope of Activity: State

Associated Marine Institutes, Inc. is a non-profit youth organization. The program consists of two factions: 1.) A training program which uses the mystique of the ocean to motivate juvenile delinquents. Captains, diving instructors, ocean science instructors, educators, etc. work with the youthful offenders to improve their self-esteem, employability skills, vocational skills and education. 2.) A marine conservation program funded by the Young Adult Conservation Corps is used to employ 16 to 23 year olds, removing them from the unemployment ranks, improving their job skills and accomplishing needed conservation work. Three current projects include: coastal vegetation, artificial reef construction and a state recreational fishing survey.

Labs contain equipment for water analysis, primary productivity and basic biochemistry (protein, lipid carbohydrate, ash, etc.). A relatively large work force and large test areas allow for many varied field studies. The use of aquaria and a full color photography lab aid in the educational aspects.

Local contacts:

Dade Marine Institute
4400A Rickenbacker Causeway
Miami, FL 33149
(305) 361-7934

Florida Keys Marine Institute
Young Adult Conservation Corps
P.O. Box 1116, Key West, FL 33040
(305) 294-5119

Florida Ocean Sciences Institute, Inc.
3563 N.W. 8th Ave., Pompano
Pompano Beach, FL 33064
(305) 942-1120

Jacksonville Marine Institute
1825 East 21st St.
Jacksonville, FL 32206
(904) 353-7555 or 353-7556

Panama City Marine Institute
222 East Beach Drive
Panama City, FL 32401
(904) 763-0748

Tampa Marine Institute
1310 Shoreline Drive
Tampa, FL 33605
(813) 248-5091

Florida Marine Science Education Association
President-elect: Marjorie R. Gordon
6301 Summit Blvd.
West Palm Beach, Florida 33406
305-686-6600

Education

Scope of Activity: Local, State, Regional and National

FMSEA goals are to improve marine science education by expanding the educator's knowledge and improve materials available for teaching, and to extend awareness and knowledge of the marine realm to individuals of all ages in all parts of the country.

FMSEA is an organization of individuals residing throughout the state of Florida and involved in some facet of marine science education. School teachers, K-12, form the majority of members; followed by teachers at environmental education centers; junior colleges, marine advisory personnel; county, state and federal park naturalists; commercial marine park personnel; scout leader, and interested individuals.

FMSEA has a quarterly journal and an annual meeting in late Spring held in various parts of the state on a weekend. It is affiliated with the National Marine Education Association.

The International Oceanographic Foundation
3979 Rickenbacker Causeway Virginia Key, Miami 33149
305 361-5786

50 full time personnel

Education

Scope of activity is global

The Foundation has been engaged in public education in ocean science since 1953. It publishes a magazine, SEA FRONTIERS, and a newsletter, SEA SECRETS. It provides information services and a discount mail order book service.

In 1975, the Foundation opened a unique science museum, PLANET OCEAN, which is open to the general public. School groups from Dade County and neighboring counties regularly use this museum as a teaching aid. In addition, adult visitors come from all parts of North and South America and Europe. The Museum uses the most modern and innovative techniques available, including special multi-projection theaters, model animations, fiber optics, sound and visual effects to dramatize its teaching. Exhibits are designed to reach people of all ages and degrees of sophistication. The Foundation also has embarked on the production of a series of scientific motion pictures for television.

The Foundation is supported by a membership of about 60,000 in 110 different countries and by admission fees to PLANET OCEAN.

The Foundation works in close cooperation with the Rosenstiel School of Marine and Atmospheric Science and the NOAA Laboratories in Miami.

Marine Science Education Center
1347 Palmer St.
Mayport, Florida 32233
(904) 246-2733 or 246-1521

12 total staff members

Fisheries, aquaculture, economics, biomedical, seafood technology, engineering, acoustics, navigation, data systems, coastal planning, geology, erosion, physics, chemistry, legal, social sciences, diving, hydrodynamics, crafts, oceanography, biology, photography, culinary arts, and fine arts

Vessels: 19' Champ (outboard, work boat), 24' Stamas (inboard-outdrive)

Scope of Activity: Global

The Marine Science Education Center, a school without permanent students, serves approximately 35,000 students, from regular schools each year by providing experiences that they would not normally receive in a regular classroom.

In addition to the equipment that might be expected in Biology, Physics, and Chemistry Labs, the Center has two boats, collecting gear, a museum, a Wet Lab containing 150-250 gallon aquaria, air compressors, a large wave tank, and a 75,000 gallon outdoor tank for viewing large marine animals. In addition to preserved animals in the museum and live animals in the Wet Lab, some animals are frozen for use with blind students. The Center makes use of a salt marsh on the St. John's River as well as a state park and a naval station on the Atlantic Ocean for fieldwork. The Center library is used for research and project work. Two T.V. outfits, one portable, have been used to produce A.V. materials. A Variety of cameras produce stills, movies, and slides which are often developed in our darkroom. Several of the staff members are excellent divers and they are equipped for underwater exploration, photography, and collection.

Maritime Agricultural Training Experience
P.O. Drawer 1430
Key West, Florida 33040
305 - 294-4773

3 faculty and/or research personnel
1 technical personnel

Disciplines represented are fisheries, seafood technology, navigation, physics, chemistry, social sciences, diving, oceanography and biology.

Vessels: 73' - Wood Hull - Shrimp Trawlers (Rentals)

Scope of Activity: Local and State

The M.A.T.E. (Maritime Agricultural Training Experience) program was developed to teach basic skills and knowledge needed to handle the job of a deck hand on any fishing vessel. Our primary interest at this time is training shrimp trawler mates. We are in the process of expanding our training to include deep water tile fish and grouper fishing and long lining for swordfish.

The student will receive classroom training in use of marine radios, fathometers and Lorans A and C. On job training occurs on rental shrimp trawlers. Each student spends at least ten days working as a mate on a trawler.

Museum of Science, Inc.
3280 S. Miami Ave.
Miami, Florida 33129
(305) 854-4242

3 professional scientists
N/A technical personnel

Disciplines represented are physics, diving and biology.

Vessels: N/A

Scope of Activity: Local

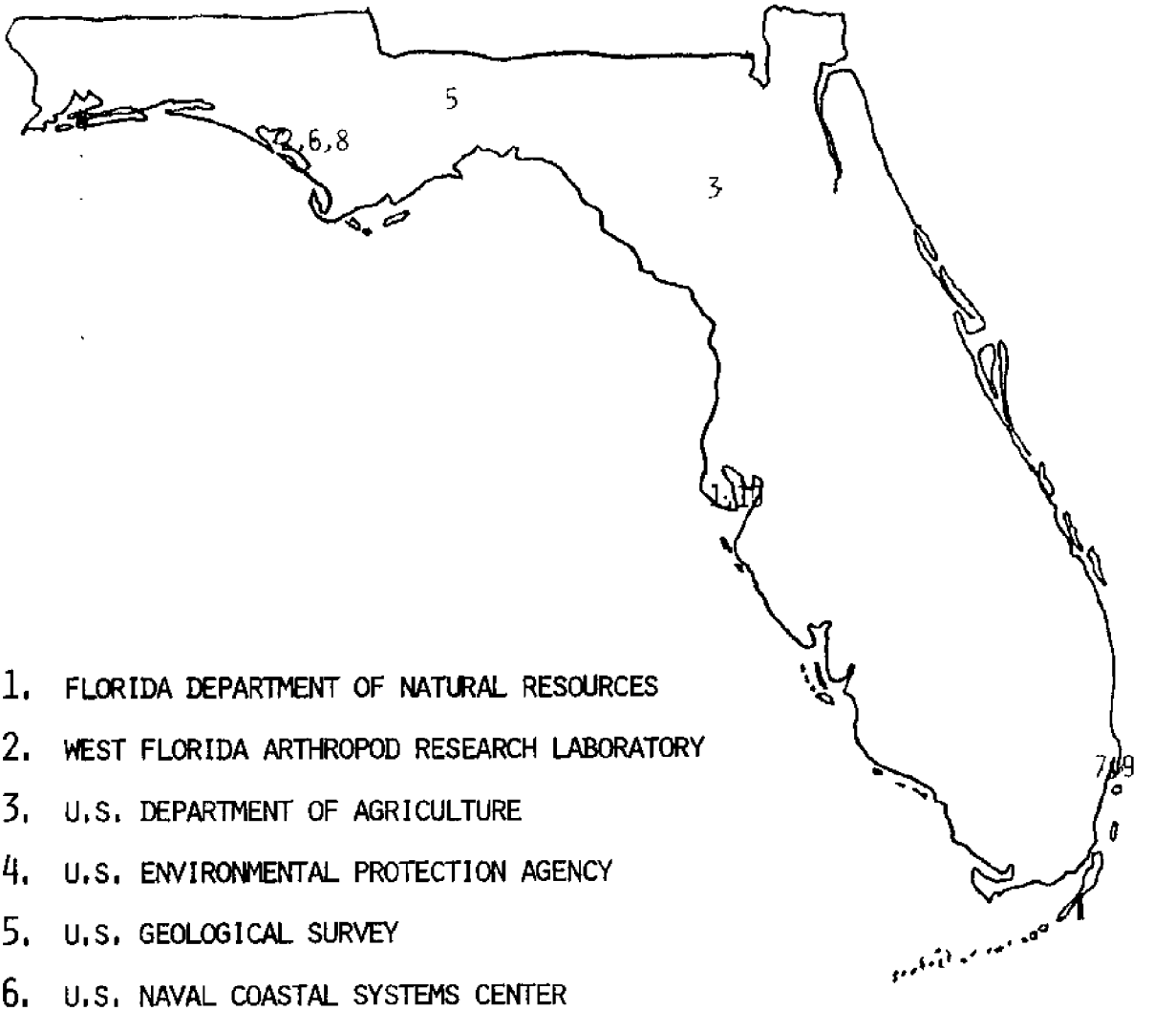
The Museum of Science, Inc. in Miami works to foster interest in marine life and habitats with special emphasis on the local marine environment. Classes are held for students grades 1 - 12 on Saturdays and during school vacations. Students learn while they wade, snorkel or scuba dive. The program aims to foster a continuing appreciation, understanding and enjoyment of the sea while also teaching conservation and safety.

The Museum of Science, Inc. supports the Florida Marine Aquarium Society and the Florida Underwater Council which are affiliated with the Museum and meet in its premises. In our Discovery Room we have a "hands-in" aquarium tank and other live marine exhibits.

STATE AND FEDERAL AGENCIES

Local governmental activities in public health or pollution control are best left to inquiry by individuals, whereas the organizations listed have statewide or even regional impact through their efforts. Again, the focus is on research and development and not regulatory or enforcement functions.

STATE AND FEDERAL AGENCIES



1. FLORIDA DEPARTMENT OF NATURAL RESOURCES
2. WEST FLORIDA ARTHROPOD RESEARCH LABORATORY
3. U.S. DEPARTMENT OF AGRICULTURE
4. U.S. ENVIRONMENTAL PROTECTION AGENCY
5. U.S. GEOLOGICAL SURVEY
6. U.S. NAVAL COASTAL SYSTEMS CENTER
7. ATLANTIC OCEANOGRAPHIC AND METEOROLOGICAL LABORATORY
8. NATIONAL MARINE FISHERIES SERVICE, PANAMA CITY LABORATORY
9. NATIONAL MARINE FISHERIES SERVICE, SOUTHEAST FISHERIES CENTER
10. NATIONAL MARINE FISHERIES SERVICE, SOUTHEAST REGIONAL OFFICE

Florida Department of Natural Resources Marine Research Laboratory
100 Eighth Avenue S.E.
St. Petersburg, Florida 33701
813/896-8626

42 faculty and/or research personnel
3 technical personnel

Disciplines represented are fisheries, aquaculture, oceanography and biology.

Vessels: R/V Hernan Cortez, 72' Modified shrimp trawler; R/V Montezuma, 32' inboard; Several 16 to 20' trailerable outboards

Scope of Activity: Regional

The Florida Department of Natural Resources Marine Research Laboratory is responsible for providing scientific data necessary for the development and sound management of Florida's marine resources. Research activities are divided into six programs:

1. Fisheries Stock Assessment: To determine population abundance, migration and dispersal patterns, size at entry into the fishery, recruitment, mortality, etc. of selected species for management recommendations.
2. Life History Studies: To determine where and when certain fishes and invertebrates spawn, at what age they become reproductive, at what age they enter the fishery, sex ratios in nature, nursery areas for juveniles, feeding strategies, etc.
3. Habitat Restoration: To develop new techniques for supplying young seagrasses and mangroves for revegetation and habitat restoration programs.
4. Benthic Community Studies: To (a) document and describe assemblages by habitat, e.g. West Florida Shelf, and (b) assess man-made effects (user groups) on Florida's unique and irreplaceable coral reefs.
5. Red Tide: In 1973, FDNR determined Florida red tides are initiated 10 to 40 nmi offshore. Current research is directed toward predicting outbreaks via satellite remote sensing based on hydrographic features and the delineation of seeding areas.
6. Mariculture: To (a) artificially spawn and rear selected species for life history and propagation data, and (b) rear green turtles from eggs to yearlings, then tag and release reared stock to evaluate "head start" programs, determine migratory routes and survival at sea.

The Marine Research Laboratory has well equipped chemistry, electron microscopy, histology, and pathology laboratories. Numerous saltwater tanks house specimens for mariculture studies. Light microscopes, spectrophotometers, x-ray, and other appropriate laboratory gear are available to each project. Plant, invertebrate, and fish reference collections are catalogued and expanding. An extensive library houses a continuously expanding reference source and distributes Laboratory publications worldwide. The Laboratory is currently housed in two buildings in St. Petersburg, with three Field Laboratories located at Jensen Beach, West Palm Beach, and Marathon. A modern, three-story laboratory is under construction at the St. Petersburg site to provide expanded laboratory facilities.

West Florida Anthropod Research Laboratory
P.O. Box 2326, Panama City 32401
904 785-6159/769-0210

8 faculty and/or research personnel
4 technical personnel

Biology

One 11' and two 15' outboard runabouts

Scope of activity is state-wide.

The laboratory is located on an approximate 10 acre peninsula near the junction of St. Andrew, West and North Bays in Panama City, Florida. The research mission of the laboratory is to develop, test and recommend effective and economical methods of controlling insects of public health importance in the State of Florida.Various phases of the control research conducted at this laboratory are concerned with pest mosquitoes and sand flies and the effects of control methods on non-target organisms associated with the salt marsh environments in the state. Numerous control recommendations have been issued to the mosquito control districts throughout the state by this laboratory.

Brackish and freshwater test cells are maintained on the laboratory premises for test purposes in developing effective and safe control methods. The laboratory is equipped with a normal supply of compound and stereoscopic microscopes, salinity and pH meters, insecticide formulating equipment, inc.

United States Department of Agriculture Soil Conservation Service
P.O. Box 1208, Gainesville, Florida 32602
904-377-8732

7 Full time Technical personnel

Disciplines represented are erosion and biology.

Vessels: None

Scope of activity is state.

Studies on coastal plants are carried out primarily at SCS's Plant Materials Center (PMC) near Brooksville, Florida. The purpose it to develop plants for revegetating coastal areas and thereby eliminating or reducing soil erosion. Studies are also conducted on planting and management techniques; and plant performance under field conditions.

The PMC is a modern, well-equipped operation with seed collecting, cleaning, testing, and storage facilities. A greenhouse and cultivated land are available for studies on growing plants.

U.S. EPA Environmental Research Laboratory
Gulf Breeze, Florida
(904) 932-5311

24 faculty and/or research personnel
5 technical personnel

Disciplines represented are chemistry and biology.

Vessels: N/A

Scope of Activity: National

The Environmental Research Laboratory, Gulf Breeze, is one of fifteen research laboratories administered by the Office of Research and Development, of the Environmental Protection Agency. Its mission is to conduct and manage research to determine exposure-effects relationships in marine, coastal, and estuarine ecosystems resulting from exposure to organic and inorganic pollutants. These investigations are required by EPA for the pesticide registration and control program and the development of water quality criteria that will protect human health and aquatic ecosystems.

The laboratory occupies an 18-acre island in Santa Rosa Sound, located about six miles southeast of Pensacola, Florida. The facility was under the administration of the Bureau of Commercial Fisheries, when it was transferred to the EPA following its inception in 1970. The physical plant includes 26 buildings, of which 12 are research laboratories. A $1 million flowing, seawater bioassay laboratory was dedicated in 1977. A chemistry unit equipped with gas and liquid chromatographs is housed in the bioassay laboratory.

U. S. Geological Survey, Water Resources Division
325 John Knox Road, Suite F-240
Tallahassee, Florida 32303
904-386-1118

115 full time faculty and/or research personnel:
91 full time technical personnel

Disciplines represented geology, physics, chemistry, diving, hydrodynamics,and oceanography.

No vessels

Scope of activity is local, state, regional and national

Investigative and monitoring activities relative to estuarine and coastal zone hydrology including circulation and water quality modeling, fresh-water saltwater relations and dynamics, pollutional aspects, runoff quality-quantity.

Major water quality laboratory, sampling and gaging equipment, computerized data storage and processing.

Naval Coastal Systems Center
Panama City, Florida
234-4011 (AC 904)

100 faculty and/or research personnel
200 technical personnel

Disciplines represented are engineering, acoustics, navigation, data systems, physics, chemistry, diving, hydrodynamics, oceanography and biology.

Vessels: 1 - 10 ton floating crane; 2 - 50' utility boats; 2 - 200' research/work ships (under contract)

Scope of Activity: National and Global

The Naval Coastal Systems Center is a major research and development activity of the Naval Material Command and maintains research, development, test and evaluation capability in the following areas: Diving and Salvage, Mine and Torpedo countermeasures, Acoustic Warfare, and Coastal Operations Support. NCSC maintains special technical expertise in coastal technologies, advanced craft test and evaluation (both surface and subsurface) and coastal systems test and evaluation. Such special disciplines as Cryobenic Magnetics, Hydrodynamic Design, High Frequency Solar, Hyperbaric Design and Shallow Water Oceanography and emphasized. Situated on St. Andrew Bay, the Center occupies almost 700 acres with additional small sites owned or leased along the adjoining Gulf of Mexico. It has a protected harbor with easy access to the Gulf.

Special facilities and equipment include: 2 offshore towers for manned or remotely monitored experiments, industrial shops, range data and control center and tracking systems, special purpose and general purpose digital and analog computers, magnetic quiet test area, acoustic test pool, ocean simulation facility (manned hypersarii tests to 2250' depth equivalent) and extensive modern laboratory and electronic equipment.

NOAA Atlantic Oceanographic and
Meteorological Laboratories
15 Rickenbacker Causeway
Miami, Florida
305-361-3361 ext. 350/353

30 research personnel
120 technical personnel

Engineering, acoustics, navigation, data systems, geology, erosion, physics, chemistry, hydrodynamics, oceanography, and biology

Vessels: Primary user of NOAA Research Vessel RESEARCHER, 2800 T. Access to other vessels of the NOAA Fleet. The lab operates the R/V VIRGINIA KEY, 70 T.

Scope of Activity: Global

The Atlantic Oceanographic and Meteorological Laboratories of NOAA is located on Virginia Key, Miami, Florida and represents one of the two NOAA Oceanographic Laboratories (excluding Fisheries Research). It consists of five laboratories: Physical Oceanography Laboratory (PhOL); Ocean Chemistry Laboratory (OCL); Marine Geology and Geophysics Laboratory (MG & GL); Sea-Air Interaction Laboratory (SAIL); and the National Hurricane and Experimental Meteorology Laboratory (NHEML).

The goals of the laboratories are to advance research in marine forecasting and charting resulting in better public service by other components of NOAA.

The laboratories are primary users of the NOAA Ship RESEARCHER and of the NOAA Research Flight Center's research aircraft P3's. They also operate R/V VIRGINIA KEY, a former Army T-boat for oceanographic work along the U.S. East Coast and the Caribbean.

National Marine Fisheries Service
SEFC, Panama City Laboratory
3500 Delwood Beach Road
Panama City, Florida 32407
(904) 234-6541

13 faculty and/or research personnel
3 technical personnel

Disciplines represented are fisheries, oceanography and biology.

Vessels: N/A

Scope of Activity: Regional

The mission of the Panama City Laboratory, one of seven research laboratories of the Southeast Fisheries Center, is to conduct research on those aspects of the life history of marine fishes that will be useful in formulating plans to conserve and manage these fishes. Projects in progress to accomplish this mission include age and growth studies, reproduction studies, food habits studies, and migration studies. Species presently being investigated include king mackerel, Spanish mackerel, bluefish, Atlantic bonito, little tunny, dolphin, red snapper, yellowtail snapper and several species of grouper. In addition, the sport-fishery and biology of billfishes plus the biology of marine turtles are also under investigation.

The facilities, located on about 12 acres of land on the western shore of St. Andrew Bay, include this main laboratory building (13,380 sq. ft.), a gear storage building (4,800 sq. ft.), a boat house (2,320 sq. ft.), and a paint and oil storage building (120 sq. ft.). Several small boats, powered with outboard motors, are maintained at the laboratory.

National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Center
75 Virginia Beach Drive
Miami, Florida 33149
305-361-5761

Approximately 300 Scientists, Technicians and support personnel

Fisheries, aquaculture, economics, seafood technology, engineering, data systems, coastal planning, chemistry, diving, oceanography, and biology

Vessels: R/V OREGON II - 170' research vessel berthed at Pascagoula, MS. 48' R/V ONSLOW BAY, berthed at Beaufort, N.C. and the 43' R/V KINGFISH II berthed at Pascagoula, MS.

Scope of Activity: Local, State and Regional

1. Center

Research responsibilities for the Southeast Fisheries Center include the living resources of the Gulf of Mexico, Caribbean Sea and the Central and South Atlantic Oceans.

The Center staff conducts research from seven Laboratories. Data base management is conducted by the Center's Technical Information Management Services (TIMS), located at each of the seven laboratories and 26 other field locations throughout the Southeast.

2. Miami Laboratory

LABORATORY FUNCTIONS (Objectives): The laboratory is engaged in fishery research on the population dynamics, biology, and ecology of oceanic pelagic fishes, invertebrates, particularly shrimp, and in conducting surveys of resources. Studies on fishes include the Atlantic bluefin tuna, marlins, sailfish, swordfish, and sharks. The shrimp research focuses on the stocks harvested by U.S. fishermen off the northern coast of South America. Resource surveys are carried out in the fishery conservation zone and are concerned with ecology and the early life history of fishes and invertebrates. Information is provided to fishery management councils and to commercial and recreational fishing interests.

AREAS OF EXPERTISE: Life history, biology, and population dynamics of the commerical and recreational fishes and invertebrates inhabiting the tropical and subtropical waters off the United States. Extensive cooperative tagging programs for billfishes, including swordfish, bluefin tunas, and sharks are conducted from this laboratory. The identification, distribution, and abundance of the eggs, larvae, and juveniles of tropical and subtropical fishes are actively studied.

National Marine Fisheries Service - Southeast Region
9450 Koger Blvd. St. Petersburg 33702
813 893-3141 FTS 826-3141

25 technical personnel

Fisheries economics, seafood technology, data systems, coastal planning, biology.

Scope of activity is global.

The Southeast Region serves as the regional representative of the Director for Fisheries with state conservation agencies, recreational interests, the fishing industry and other constituencies and the general public. The region is responsible for planning, organizing and implementing fishery management conservation programs, including regulatory requirements, fisheries management plans, fisheries development, recreational fisheries, international fisheries and services throughout the range of NMFS programs. It provides administrative and technical support to regional fishery management councils and is responsible for program planning and evaluation, budgeting and administrative support services for various NMFS elements in the Southeast.

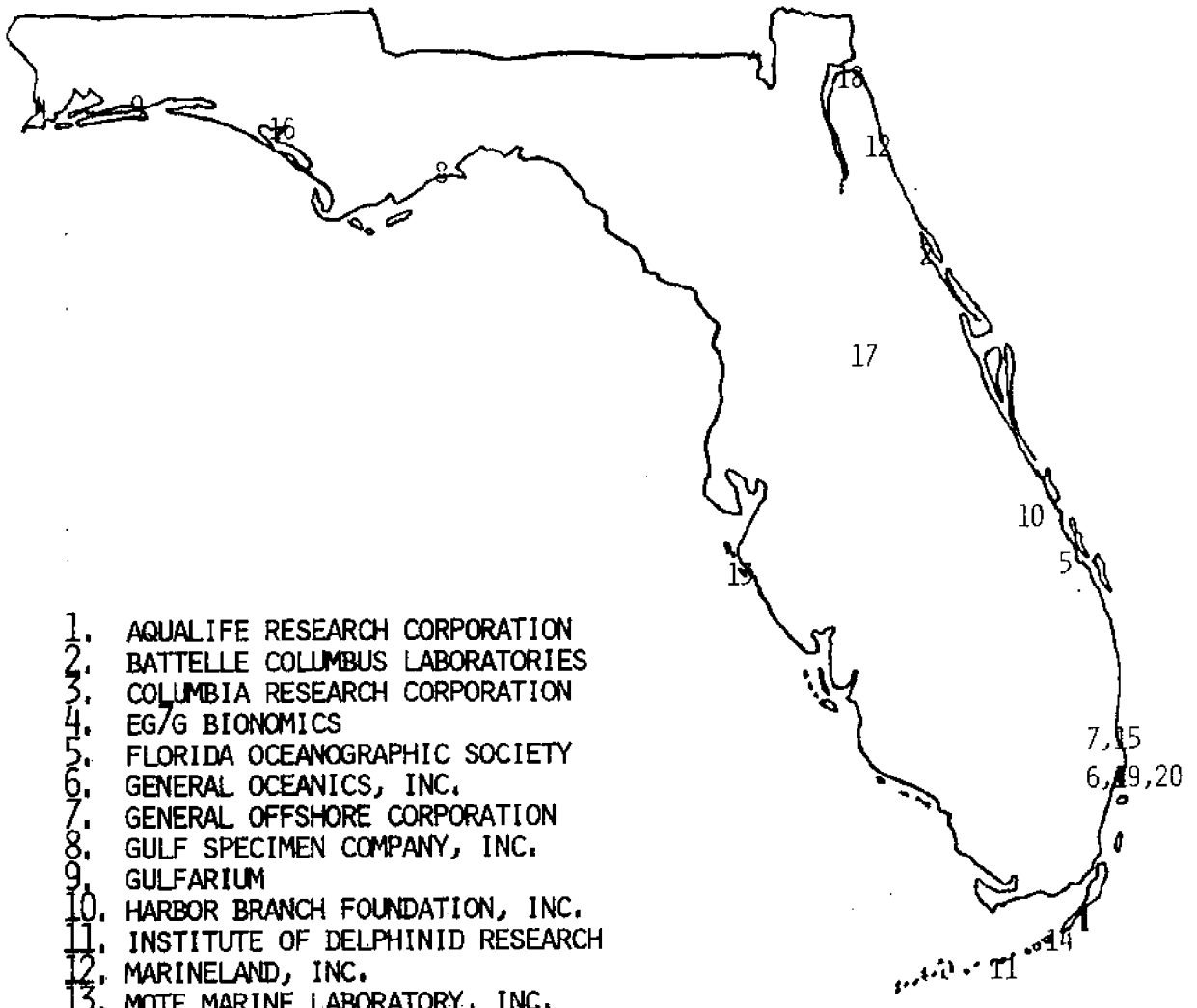
Our four major regional program elements are Fisheries Law Enforcement, Fisheries Development, Environmental and Technical Services and Fisheries Management.

We have no research capabilities at our St. Petersburg location, nor do we have any specialized laboratory facilities for such research. Research is done by the Southeast Fisheries Center which is located in Miami. The Center has seven research laboratories distributed throughout the Southeast. Information regarding research capabilities and research activities should be directed to the Southeast Fisheries Center.

NON-PROFIT AND PRIVATE ORGANIZATIONS

Often supported by long-term endowments or else committed to specific missions, these organizations complement the roles of academia and agencies in advancing both basic and applied knowledge of Florida's marine and coastal resources.

NON-PROFIT AND PRIVATE ORGANIZATIONS



1. AQUALIFE RESEARCH CORPORATION
2. BATTELLE COLUMBUS LABORATORIES
3. COLUMBIA RESEARCH CORPORATION
4. EG/G BIONOMICS
5. FLORIDA OCEANOGRAPHIC SOCIETY
6. GENERAL OCEANICS, INC.
7. GENERAL OFFSHORE CORPORATION
8. GULF SPECIMEN COMPANY, INC.
9. GULFARIUM
10. HARBOR BRANCH FOUNDATION, INC.
11. INSTITUTE OF DELPHINID RESEARCH
12. MARINELAND, INC.
13. MOTE MARINE LABORATORY, INC.
14. OCEAN FARMING SYSTEMS, INC.
15. OCEAN WORLD, INC.
16. POTOMAC RESEARCH, INC.
17. SEA WORLD OF FLORIDA
18. TETRA TECH, INC.
19. TROPICAL BIOINDUSTRIES
20. WOMETCO MIAMI SEAQUARIUM

Aqualife Research Corporation
P.O. Box 3414, Marathon Shores, Florida 33052
305-289-1550

3 full time faculty and/or research personnel
3 full time technical personnel

Disciplines represented are fisheries, aquaculture, diving and biology.

Vessels 1, 22.2 ft. Aquasport outboard.

Scope of activity is local.

Aqualife Research Corporation is a small mariculture company in the Florida Keys specializing in the development of techniques for the culture of marine tropical fish. The culture and maintenance of other marine animals and plants are also included in the general activities of the company. Commercial application of these techniques through sale of cultured fish to available markets is the end result of the technology that is developed.

Facilities include a brood stock and hatchery building, flow through growout systems and air and sea water supply systems. Experience and facilities for disease identification and control and water analysis are also available.

Battelle Columbus Laboratories, Florida Marine Research Facility
Sailfish Drive Ponce Inlet - Daytona Beach 32019
904 761-3072, 767-3330

4 full time faculty and/or research personnel
4 technical personnel

Fisheries, aquaculture, biomedical, seafood technology, diving, hydrodynamics, biology, marine fouling, atmospheric corrosion, bioassay, toxicity, environmental assessment

22' Aquasport research vessel and a 17' jon boat for sampling

Scope of activity is global.

Battelle's Florida Marine Research Facility in Daytona Beach is one of Battelle Memorial Institute's three marine laboratories which interact to provide coast to coast capabilities in the fields of marine toxicology/bioassay research, environmental impact assessment/monitoring, and marine biofouling/corrosion research. The other two marine laboratories are located in Sequim, Washington and Duxbury, Massachusetts. Affiliation with these two laboratories enables the Florida Laboratory to draw from a large pool of biological, chemical, and mathematical capabilities and expertise specifically geared toward marine environmental research.

Bioassay/toxicology/aquaculture facilities include an integrated 100 gpm seawater system capable of delivering unfiltered, filtered, and temperature controlled water to over 75,000 gallons of holding, rearing and exposure facilities. Exposure facilities include gravity fed diluter systems, constant temperature rooms, metering pumps for water and airborne toxicant delivery systems, toxicant removal systems, and water quality monitoring systems. Environmental assessment/monitoring equipment include two sampling vessels which are supported by an extensive array of hydrographic and biological field sampling gear and SCUBA equipment. Facilities are well suited for processing, enumerating, identifying, and quantifying benthic, epibenthic and pelagic species. Marine fouling facilities include over 2,000 sq. ft. of exposure dock space and 450' of Halifax River front property for invertebrate fouling research including intertidal, total immersion, mud line and benthic exposures. Algal fouling facilities are provided in our filtered water outdoor pools. Atmospheric corrosion facilities are located on 200 front feet of oceanfront property in Ponce Inlet, consisting of 20,000 sq. ft. of exposure area. Numerous types of exposure racks and devices are available for a variety of specimen configurations.

Columbia Research Corporation
Gulf Coast Division, Coastal Resources Analysis Branch
P.O. Box 9453, Panama City, Florida 32407
904-234-8817

50 full time faculty and/or research personnel
34 full time technical personnel

Disciplines represented are aquaculture, seafood technology, engineering, acoustice, navigation, data systems, coastal planning, physics, diving, hydrodynmaics, oceanography, and biology.

Vessels: 1-24 foot inboard/outboard.

Scope of activity is local and state.

Columbia Research Corporation (CRC) and the Coastal Resources Analysis Branch (CRAB), are located a mile from the worlds most beautiful beaches, at Panama City Beach, Florida. CRC provides support in the following areas.

1. Diving and Salvage
2. Mine Countermeasures and Navigation
3. Acoustic Countermeasures
4. Special Warfare/Marine/amphibious Warfare

In conjunction with CRC, CRAB offers technical support in Ocean Engineering/ Technology and Environmental Studies.

Coastal Resources Analysis Branch (CRAB) is a water quality laboratory capable of performing bacteriological and nutrient analyses on water, shellfish and sediments; aquaculture design and implimentation, and Environmental Impact Assessments.

EG&G, Bionomics Marine Research Laboratory
Route 6, Box 1002
Pensacola, Florida 32507
(904) 492-0515

6 research personnel
8 technical personnel

Fisheries, aquaculture, chemistry, diving and biology

Vessels: Most projects are conducted using rented boats which meet the needs of the specific project. The laboratory owns a 7.4 meter (m) Aquasport with a 175 horsepower (hp) Evinrude motor and a 4.2 m jon-boat with a 6 hp motor.

Scope of Activity: Global

EG&G is a Massachusetts based, Fortune 500 company that provides a variety of goods and services to worldwide industries and governments. EG&G, Bionomics is a multi-disciplinary organization involved in aquatic toxicological research in freshwater, estuarine, and marine environments. Toxicity tests, bioaccumulation potential studies, and chemical analyses have been performed on an extremely wide variety of different materials; pure chemicals, mixtures of chemicals, complex industrial effluents, mine tailings, drilling muds, and sediments. Field studies to determine the environmental impact of these materials have also been conducted at various U.S. locations and Puerto Rico. Bionomics has two geographic locations. The Aquatic Toxicology Laboratory, which conducts work in freshwater environments, and an Analytical Chemistry Laboratory are located in Wareham, MA. Bionomics Marine Research Laboratory, which conducts research in estuarine and marine environments, and an Analytical Chemistry Laboratory is located in Pensacola, FL.

Bionomics Marine Research Laboratory is located on Big Lagoon, a Gulf of Mexico estuary near Pensacola, Florida. This location allows the use of high quality, natural seawater for holding, culturing, acclimating, and testing a variety of saltwater organisms. Seawater holding facilities are designed to allow adjustment over a wide range of salinities and temperatures before the seawater enters the 4000 square foot wet laboratory where the tests are conducted and marine organisms are cultured. The wet laboratory has two environmentally controlled rooms, 12 Mount and Brungs diluters for flow-through tests, and 6 thermostatically controlled water baths which allow 18 static tests to be conducted simultaneously. The wet lab also has a chemical preparation room, a glass shop, a library, and an emergency generator that can supply sufficient power to operate the entire laboratory in the event normal electrical service is interrupted. Field sampling equipment includes a variety of dredges, corers, nets, seines, and water samplers. Chemical analyses are conducted in a separate 600 square foot building equipped with a gas chromatograph, air exhaust hoods, bench space, and extraction apparatuses.

Florida Oceanographic Society
1212 Riverside Drive, Stuart Florida 33494
305-287-1950

Full time faculty and/or research personnel varies with project requirements.

Disciplines represented are engineering, navigation, data systems, coastal planning, geology, erosion, physics, chemistry, diving, hydrodynamics, oceanography, and biology.

Vessels: Small outboard collecting boats, various larger boats as donated from time to time.

Scope of activity is state.

Florida Oceanographic Society, established since 1964, is dedicated to the encouragement and development of marine sciences through the support of research and educational activities. Located on the St. Lucie Estuary, the Society is actively involved in the study of the estuary, inlet and near coastal reef systems.

The headquarters building includes a research library, laboratory and limited living facilities for visiting scientists and science educators. It provides a center for conferences, lectures and workshops on marine science issues and contributes to the community's understanding of the marine environments. The facilities also include dock areas to capacitate both large and small vessels. The large laboratory and adjoining areas are modified to meet a particular project's requirements.

General Oceanics, Inc.
5535 NW 7th Ave.
Miami, Florida 33127
(305) 754-6658

3 research personnel
30 technical personnel

Disciplines represented are fisheries, engineering, data systems, physics, chemistry, hydrodynamics, and oceanography.

Vessels: one 42' workboat.

Scope of Activity: Global

Design, manufacture research instruments for use in hydrology with a major emphasis in oceanography. 90% of our products are patented and are divided into main groups of: water samplers; water sensors for flow, temperature, and tide; marine biological samplers; wire metering; and systems for shipboard use. We manufacture these items in our Miami plant of 7,000 square feet.

General Offshore Corporation
2605 Stirling Road (33312)
P.O. Box 21727, Ft. Lauderdale, Florida 33335
305-989-2188

No faculty/research personnel
11 technical personnel

Economics, engineering, navigation, physics, diving, hydrodynamics and oceanography

Vessels: one 65' technical support craft (owned). Several R/V's to 165' (chartered).

Scope of activity is global

General Offshore Corporation is a small business engaged in the support of a wide variety of marine technical programs conducted by: the U.S. Navy, many of their large contractors, and offshore oil and mineral operators. his support includes marine and ocean engineering and design, at-sea testing, fabrication of specialized winches, handling systems, buoys...etc., crew services, and logistics. In addition, the company operates and maintains ten Navy support craft of various types and sizes out of bases in New London, Connecticut; Ft. Lauderdal, Florida; and Key West, Florida.

General Offshore Corporation's headquarters facility in Ft. Lauderdale includes two office buildings and a large shop/warehouse building as well as a half acre assembly and staging area. The shop is equipped for fabrication and repair of marine equipment. Much of the equipment, including a large trailer mounted welding machine, is transportable for dockside use.

In addition, specialized instrumentation is available on a rental basis and currently includes side-scan sonar, sub-bottom profiler, digital recorders, and precision positioning systems.

Gulf Specimen Co., Inc.
P.O. Box 237
Panacea, Florida 32346
904-984-5297

1 faculty and/or research personnel
3 technical personnel

Biology

Vessels: 1 26' Aquasport, 1 17' fiberglass tunnelboat, 1 10' skiff

Scope of Activity: Global

Gulf Specimen collects, cultures and supplies living marine invertebrates and fishes from the shallow northeastern Gulf of Mexico to colleges, universities, public schools and public aquaria for research and educational use.

Approximately 80,000 gallons of filtered sea water are maintained under roof in both large and small holding tanks. A large inventory of the local fauna is maintained at all times. This allows excellent facilities for ecological and ethological research together with a wide array of unpolluted field habitats. Visiting investigators are welcome to use these facilities. Limited dry lab space is available.

Gulfarium
Highway 98 East, Fort Walton Beach, Florida 32548
904-244-5169; 904-242-8378

2 Full time faculty and/or research personnel
12 full time technical personnel

Disciplines represented are fisheries, aquaculture, economics, engineering, acoustics, navigation, chemistry, diving, hydrodynamics, oceanography and biology.

Vessels: one 38' sport fisherman - collecting, diving boat.
one 20' collector
one 16' collector, diving boat.

Scope of activity is local.

The Gulfarium, a marine show aquarium, was opened to the public in 1955. Many former and present employees have utilized the facility to further their educational activities. Scientists from the University of Florida and Florida State University, University of West Florida and other colleges and universities have utilized our facilities. Four museums have been supplied with specimens for their collections.

The facility has seven large marine mammal tanks and pools, one large glass fronted tank containing many species from the Gulf of Mexico, a penguin facility, and otter facility, and 15 other tanks and pools.

Harbor Branch Foundation, Inc.
RR 1, Box 196
Fort Pierce, Florida 33450
(305) 465-2400

21 faculty and/or personnel
66 technical personnel

Disciplines represented are fisheries, aquaculture, engineering, navigation, data systems, coastal planning, geology, chemistry, diving, hydrodynamics, oceanography and biology.

Vessels: 2 research ships 100 and 124', numerous small craft, and 2 research submersibles of the 2000' class.

Scope of Activity: National

Harbor Branch Foundation, Inc. is a not-for-profit corporation established primarily for the development of tools and systems for underwater oceanographic research. Basic and applied research is conducted at the Johnson Science Laboratory in aquaculture and pollution ecology with emphasis on the Indian River Coastal Zone including the estuary and adjacent continental shelf.

Harbor Branch scientists and research assistants represent a multidisciplinary team of chemists, geologists, physical oceanographers, botanists, benthic ecologists, fisheries biologists and other marine science disciplines.

Scientists at Harbor Branch receive support from engineers of the Link Engineering Laboratory. This support takes the form of ship and research submersible operations as well as development of special sampling tools. The unique JOHNSON-SEA-LINK class submersibles provide scientists with diver lockout capabilities with mixed gas diving to 350' and one atmosphere observation and manipulator sampling to 2000'.

Harbor Branch has a growing technical library; a DEC 11/34 minicomputer; R&D labs; drafting facilities; high and low bay machine and fabrication shops; two specially designed chemistry labs for nutrient, trace metal, and pesticide research; scanning and transmission electron microscopes; two ships and numerous small research vessels and land vehicles; 800 ton Marine Railway Drydock.

Institute for Delphinid Research
P.O. Box Dolphin, Marathon Shores, Florida Keys 33052
305-289-1121

10 Full time faculty and/or research personnel
3 full time technical personnel

Disciplines represented are biomedical, data systems, social sciences, diving, and biology.

Vessels: N/A

Scope of activity is local

The I.D.R. is presently involved in varied aspects of marine mammals. We provide daily shows for the public that are educationally oriented. Our narration covers breeding, explaining the many facets of husbandry necessary for successful dolphin reproduction; and displaying our maternity facility housing the babies born in captivity, along with their parents. We give a complete explanation and demonstration of various forms of dolphin training. Research is involved with an ongoing study of communication projects with Tursiops truncatus. In addition to the on-site activities, the I.D.R. is part of the East Coast Marine Mammal Stranding Network and is actively involved in conservation activities via the International Whaling Commission.

The dolphins are housed in 1.5 acres of ocean pens located in the Gulf of Mexico, a completely natural environment. An open tidal pool area houses several species of turtles and a bird sanctuary for injured birds of the keys. A small electronics workshop contains a disk-based 6205 microcomputer, a specialized software library, and the capacity to record, analyze and transmit underwater audio signals. A video tape system routinely records behavioral experiments.

Marineland, Inc.
Rt. 1, Box 122
St. Augustine, Florida 32084
904/471-1111

1 faculty and/or research personnel
2 technical personnel

Disciplines represented are fisheries, aquaculture, diving, oceanography and biology.

Vessels: Several small outboards

Scope of Activity: Local, State, Regional and National

Marineland, Inc., or Marineland of Florida, the world's first oceanarium, is located directly on the ocean along highway A1A between St. Augustine and Daytona Beach. Research is normally conducted as part of the daily routine, primarily aimed at the maintenance of its living collection, and is also undertaken on behalf of, or provides the means for, outside investigators, various state and federal agencies, and various academic organizations. Researchers working at the Marineland complex have pioneered many of the now standard practices used in the captive maintenance of marine organisms. Holding areas and similar facilities are often made available to such scientists. In addition, Marineland serves as the site for the C.V. Whitney Marine Research Laboratory, which is presently engaged in a varied program of marine-oriented research. Both organizations actively collaborate on numerous projects.

Facilities include: the attraction complex comprising two 450,000 gallon display tanks, several marine mammal display areas, and many small marine oriented displays. Also included are the boat facilities, a complete marina, the Marineland Research Laboratory, and several support buildings, along with the Marineland Quality Inn.

Mote Marine Laboratory, Inc.
1600 City Island Park
Sarasota, Florida 33577
(813) 388-4441

11 faculty and/or research personnel
19 technical personnel

Fisheries, biomedical, engineering, acoustics, geology, erosion, chemistry, oceanography and biology

Vessels: Several boats; from skiffs to 36' in length

Scope of activity: Local and State

The Mote Marine Laboratory is an outgrowth of the Cape Haze Marine Laboratory which was originally chartered in 1955 as a nonprofit organization dedicated to basic research in marine biology. The Laboratory is located on City Island in Sarasota on a six acre site fronting on Sarasota Bay and New Pass, with access to the Gulf of Mexico. The main building has 13,000 square feet of floor space containing a library, and aquarium room, and sixteen research laboratories and collection rooms. Two temperature controlled concrete pools, filled with filtered seawater, house sharks and other large marine animals. A large tank, approximately 130 feet in diameter, is utilized for long-term study of sharks. Maintenance costs are derived from the Mote Scientific Foundation, membership contributions, and modest charges to investigators for laboratory space and marine animals.

The year-round research program of the Laboratory is divided into two categories:

1. Bio-medical research using marine organisms for translating experimental results to human health.

2. Environmental assessment for such diverse problems as the effect of hot water effluent from power plants on fishes; meroplankton and benthic organisms; effects of dredge and fill, sea walls, etc. on the marine environment; environmental impact statements and beach restoration.

Specialized equipment includes atomic absorption, gas chromotography, scintillation counter and standard units such as spectrophotometers, balances, microscopes, etc.

Ocean Farming Systems, Inc.
P. O. Box 164
Tavernier, Florida 33070
305-852-3624/9284

4 research personnel
10 technical personnel

Fisheries, aquaculture, seafood technology, engineering, diving, and marine biology.

Vessels: 2 small motorboats

Scope of Activity: Global

Ocean Farming Systems, Inc. is principally configured to be a profit-making enterprise in the broad field of pet, bait, and food fish activity...saltwater only.

As such, research and development play important roles. 15000 sq.ft. of the new million dollar facility in Plantation Key is devoted to breeding, hatching, and raising of marine fish. The Company is the leading world exponent of tank-raised brine shrimp culture, and these are sent alive worldwide. The Company developed a unique salt water nutrient and conditioner, Ocean Green, a unicellular green algae/plant which has revolutionized the concept of marine pet fishkeeping by instantaneously conditioning a tank or aquarium for ocean-oriented fish.

New ventures are many, and the pursuit will be facilitated by the new plant. Among those beyond the pure research stage, and well into development, is the domestic breeding of pompano.

Ocean World, Incorporated
17th St. Causeway, Fort Lauderdale, Florida 33316
305-525-6612

10 Full time faculty and/or
4 Full time technical personnel

Disciplines represented are economics, engineering, acoustics, diving and biology.

Vessels: 1 - 23' open fisherman outboard

Scope of activity is local.

Ocean World is a small privately owned marine park located in Fort Lauderdale, Florida. The park is a commercial enterprise geared toward public display and entertainment. All of our research and experimentation has been in conjunction with the health and wellbeing of our own collection. This has brought about several noteworthy events; the laying and subsequent hatching of our loggerhead sea turtle's and alligator's eggs. Through the care and maintenance of our animals we have become quite proficient in water filtration, marine mammal handling and medicating, preventative medicine, etc. Our health record is outstanding.

There are three large pools, a shark moat and an alligator pit from which shows and demonstrations are presented four times daily. We also have several smaller pools and enclosures that provide comfort and security for our animals with a maximum of public observation and access to the animals themselves. This allows the public a unique opportunity to learn thru personal interaction with the animals in our exhibits.

Potomac Research, Incorporated
1607 Lisenby Avenue, Panama City, Florida 32405
904-769-3352

12 faculty/research personnel (all on consultant basis)

Aquaculture, economics, biomedical, engineering, acoustics, navigation, data systems, coastal planning, geology, erosion, physics, chemistry, social sciences, diving, hydrodynamics, oceanography, biology.

1 vessel the 23' John Almand

Scope of activity is national

Potomac Research, Incorporated is primarily an engineering and technical support organization, and represents the most complete scientific support capability available in the North Florida region. PRI also maintains a complete environmental laboratory. The goals and functions of this laboratory are aquatic estuarine, and marine studies. Included are experimental design and preparation of environmental impact studies as well as studies with unique requirements such as environmental support for experiments on the Ocean Thermal Energy Conversion (OTEC) system. PRI also maintains a computer support group for programming and operations.

Sea World of Florida
7007 Sea World Drive, Orlando, Florida 32809
305-351-3600

4 Full time faculty and/or research personnel
15 Full time technical personnel

Disciplines represented are biomedical, acoustics, physics, chemistry, and biology.

Vessels: one 28', and 24', and one 20' collecting/research vessel.

Scope of activity is state.

Sea World of Florida researches husbandry programs for marine mammals, birds and fishes on two fronts; as a continuing effort to enhance welfare of those animals in the company's various collections, and under the aegis of the non-profit Hubbs-Sea World Research Institute in cooperation with various state and federal agencies.

Within the theme park, a 135-acre family entertainment complex in Orlando, Florida, the curatorial staff oversees the collecting, housing, and maintenance of nearly 2,000 animals which includes marine mammals, fishes, and a variety of waterfowl. Research efforts are focused on dietary preferences, blood analyses, water quality, social and reproductive behavior, and other matters related to animal husbandry and propagation.

The Sea World curatorial staff also responds to numerous calls each year from state and federal agencies seeking assistance for beached marine animals. In particular, the staff has assumed a high profile in researching reproductive behavior of the endangered Florida manatee. Those studies include blood analyses, food intake, congregant and courtship behavior and are undertaken in an effort to establish a repopulation program for such endangered species. Hubbs-Sea World Research Institute is also engaged in breeding programs for various species not on endangered or threatened lists.

Tetra Tech, Inc.
7825 Baymeadows Way, Suite 321B
Jacksonville, Florida 32216
Corporate Headquarters:
630 N. Rosemead Blvd.
Pasadena, CA 91107
904-737-7855

5 faculty and/or research personnel
6 technical personnel

Engineering, data systems, coastal planning, erosion, physics, diving, hydrodynamics, and oceanography.

Scope of Activity: Global

Tetra Tech provides engineering and technical management services in the fields of water and energy resources. The Company also develops, manufactures, and markets an extensive line of marine products and systems including underwater television cameras and inspection systems, oceanographic instrumentation, and remote controlled deep sea inspection vehicles.

The Jacksonville, Florida office of Tetra Tech is engaged in both research and engineering design activities concerning the marine environment. These range from the study and design of major beach nourishment projects in Florida and New York, to mathematical modeling of nearshore circulation and thermal plumes issuing from nuclear power plants. The Jacksonville offices are housed in approximately 5300 square feet including library, conference room, equipment storage, data processing center, and professional offices space. Computer facilities include AMDAHL 470 time sharing via a Raytheon PTS-100 system, and standalone capabilities using an HP2647A Intelligent Graphics System. Auxiliary support includes printer plotter, pen plotters, digitizer, and graphics equipment.

Tropical Bioindustries
9000 Southwest 87 Court, Room 104, Miami, Florida 33176
305-279-7026

3 Full time faculty and/or research personnel
2 Full time technical personnel

Disciplines represented are fisheries, aquaculture, coastal planning, and biology.

Vessels: N/A

Scope of activities are local,state and global.

Tropical Bioindustries is a subsidiary of Groton Associates, Incorporated.

Tropical Bioindustries has made possible by assemblage of full time specialists and internal generation of operating philosophy, a body of knowledge and experience which is relevant to current state of technology in resource mapping, aquatic sciences, tropical agriculture, lake management, economically sound bioindustrial business enterprises and land planning. A strong belief in beneficial outcome of "cross-fertilization" of ideas has led us to participate as members of multi-disciplinary planning teams for both private and public organization at the national and international levels, in many regions of the world, but with particular emphasis on tropical and sub-tropical environments.

Wometco Miami Seaquarium
4400 Rickenbacker Causeway
Miami, Fl. 33149
(305) 361-5705

Approximately 200 research personnel.
Approximately 20 technical personnel.

Disciplines represented are fisherics, aquaculture, biomedical, engineering, diving, and biology.

Vessels: one custum 75' steel hulled yacht seaquarium, one 20' Mako, two 16' Boston Whalers

Scope of activity is global.

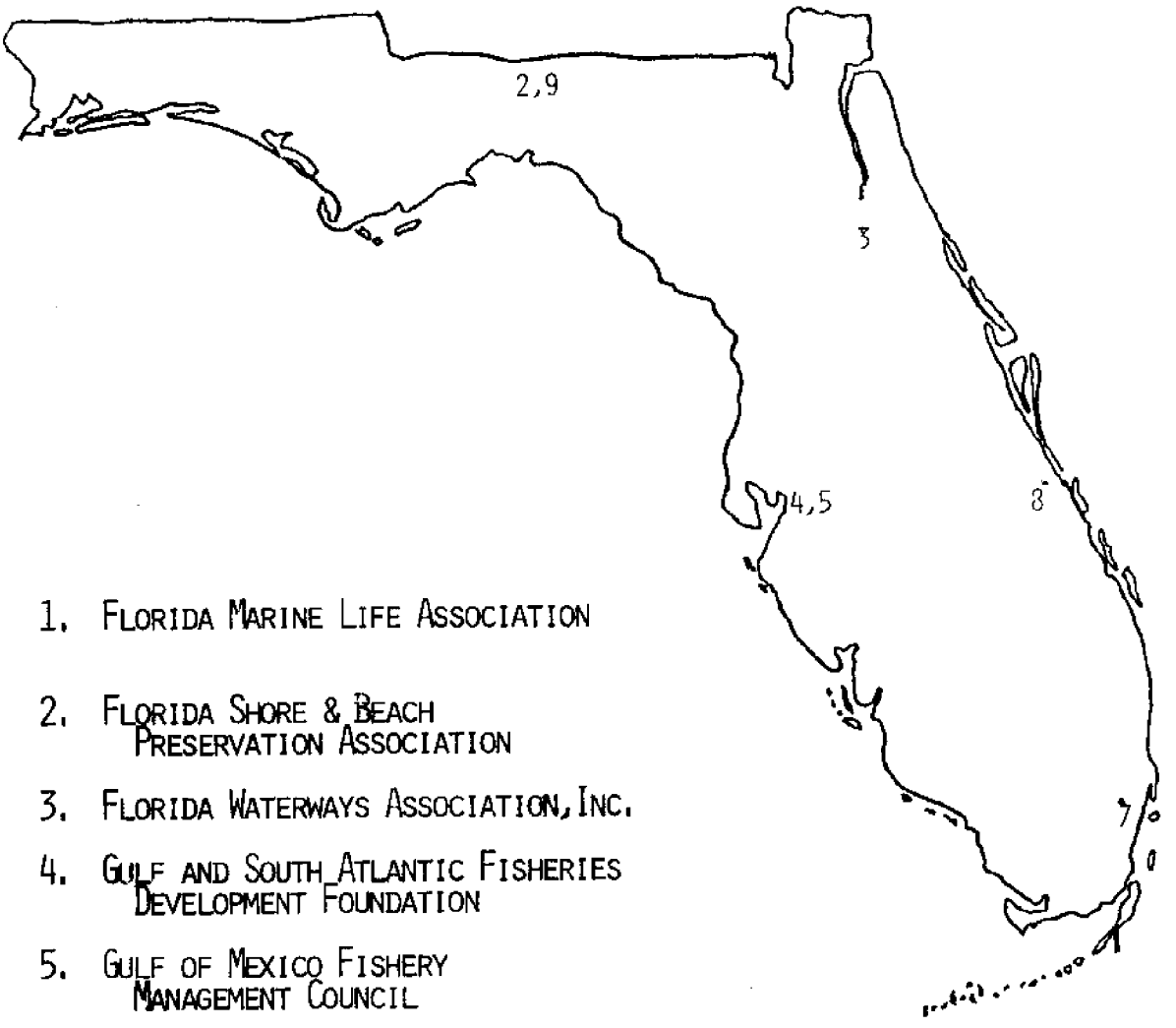
The Seaquarium, the world's largest tropical aquarium, is located on 57 acres within the Virginia Key marine science complex. In addition to conducting its own research in connection with the maintenance of its collection, the Seaquarium cooperates with the Department of the Interior and the University of Miami. Scientists working at the Seaquarium have pioneered numerous projects relating to marine biology, and specimens have been supplied to others doing research throughout the nation.

Two large tanks and 44 smaller tanks and pools permit observation of marine life in a habitat closely approaching its natural environment, both from above and through a series of underwater windows. Many specimens of a variety of sharks are kept in the shark channel.

ASSOCIATIONS, TRADE ORGANIZATIONS AND OTHER INTERESTS

Representation of statewide user groups often involves the establishment of an office or central contact point that can provide the public with a starting point for learning more about a particular marine resource. Also in this miscellaneous section are public groups that deal with certain marine resources. Both groups include fisheries, ports, erosion, marine trades, etc.

ASSOCIATIONS, TRADE ORGANIZATIONS AND OTHER INTERESTS



1. Florida Marine Life Association
2. Florida Shore & Beach Preservation Association
3. Florida Waterways Association, Inc.
4. Gulf and South Atlantic Fisheries Development Foundation
5. Gulf of Mexico Fishery Management Council
6. South Atlantic Fishery Management Council
7. Marine Industries Association of Florida
8. Organized Fishermen Of Florida
9. Southeastern Fisheries Association
10. Port Authorities (not shown on map)

Although not primarily devoted to research or education, the following organizations are listed due to the important role they play in making comprehensive information available for certain broad areas of interests:

Florida Marine Life Association
156 Dove Avenue
Tavernier, FL 33070
(305) 852-5459

A trade organization of collectors, shippers, wholesalers, and retailers of marine organisms for the aquarium hobby.

Florida Shore & Beach Preservation Association, Inc.
325 John Knox Road, F-214
Tallahassee, FL 32303
(904) 386-1983

Encourages the preservation and restoration of Florida's beaches.

Florida Waterways Association, Inc.
P. O. Box 1766
Palatka, FL 32077
(904) 328-5869

A private, non-profit corporation devoted to the improvement of Florida's ports and waterways throughout the state.

Gulf and South Atlantic Fisheries Development Foundation
5401 West Kennedy Blvd., Suite 571
Tampa, FL 33609
(813) 870-3390

Develops fishery business and technological practices.

Gulf of Mexico Fishery Management Council
5401 W. Kennedy Blvd., Suite 881
Tampa, FL 33609
(813) 228-2815

A planning agency engaged in developing fishery management plans for the fisheries of the Gulf of Mexico under the provision of PL 94-265.

South Atlantic Fishery Management Council
1 Southpark Circle, Suite 306
Charleston, SC 29407
(803) 571-4366

A planning agency engaged in developing fishery management plans for the fisheries of the South Atlantic under the provision of PL 94-265.

Marine Industries Association of Florida, Inc.
Bob Ulrich, President
1995 N.E. 150 St.
No. Miami, FL 33181
(305) 945-7403

A trade organization of marine dealers, marina and boatyard operators, manufacturers, and marine support industries.

Organized Fishermen of Florida
Box 740
Melbourne, FL 32901
(305) 725-5215

A non-profit corporation devoted to the improvement of Florida's commercial fishing industry.

Southeastern Fisheries Association, Inc.
124 West Jefferson St.
Tallahassee, FL 32301
(904) 224-6821

A non-profit corporation devoted to the improvement of Florida's fishing and seafood processing industries

Port Authorities

Following is a list of Florida Port Authorities. Most support services required for normal ship operation and the special requirements of oceanography are available in the ports and many also serve as customs ports of entry. At some ports large shipbuilding firms provide building, maintenance, and major repair services.

Port Boca Grande,
Punta Gorda, FL

Canaveral Port Authority
Cape Canaveral, FL

Port Evergaldes Authority
Port Everglades, FL

Port of Fernandina
Fernandina Beach, FL

Ft. Pierce Port & Airport Authority
Fort Pierce, FL

Jacksonville Port Authority
Jacksonville, FL

Port of Key West
Key West, FL

Port Laudania Terminal, Inc.
Dania, FL

Mayport Naval Station
Mayport, FL

Port Manatee,
Bradenton, FL

Port of Miami
Miami, FL 33132

Port of Palm Beach
West Palm Beach, FL

Panama City Port Authority
Panama City, FL

Pensacola Port Authority
Pensacola, FL

Port St. Jow Port Authority
Port St. Joe, FL

Port of St. Petersburg
St. Petersburg, FL

Port Sutton
Tampa, FL

Tampa Port Authority
Tampa, FL

SURVEY SHEET

Florida Marine Education & Research Organizations

Name of Organization: _____

Address: _____
_____
_____
_____

Telephone: _____

Number of full-time professionals:

_____ Educational

_____ Research

Number of full-time technical personnel: _____

Disciplines represented (circle):

aquaculture, biology, biomedical, fisheries, seafood technology, acoustics, chemistry, data systems, engineering, erosion, geology, hydrodynamics, navigation, oceanography, physics, coastal planning, economics, law, social sciences

Vessels, size and type:

_____

_____

Scope of Activity:

global national regional state

Descriptive narrative (two paragraphs -- 1. marine goals and general purpose; 2. specialized lab equipment and facilities):